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Mathematics

Grade 8

REVIEW INSTRUMENTS

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PROVINCIAL REVIEWS
MATHEMATICS

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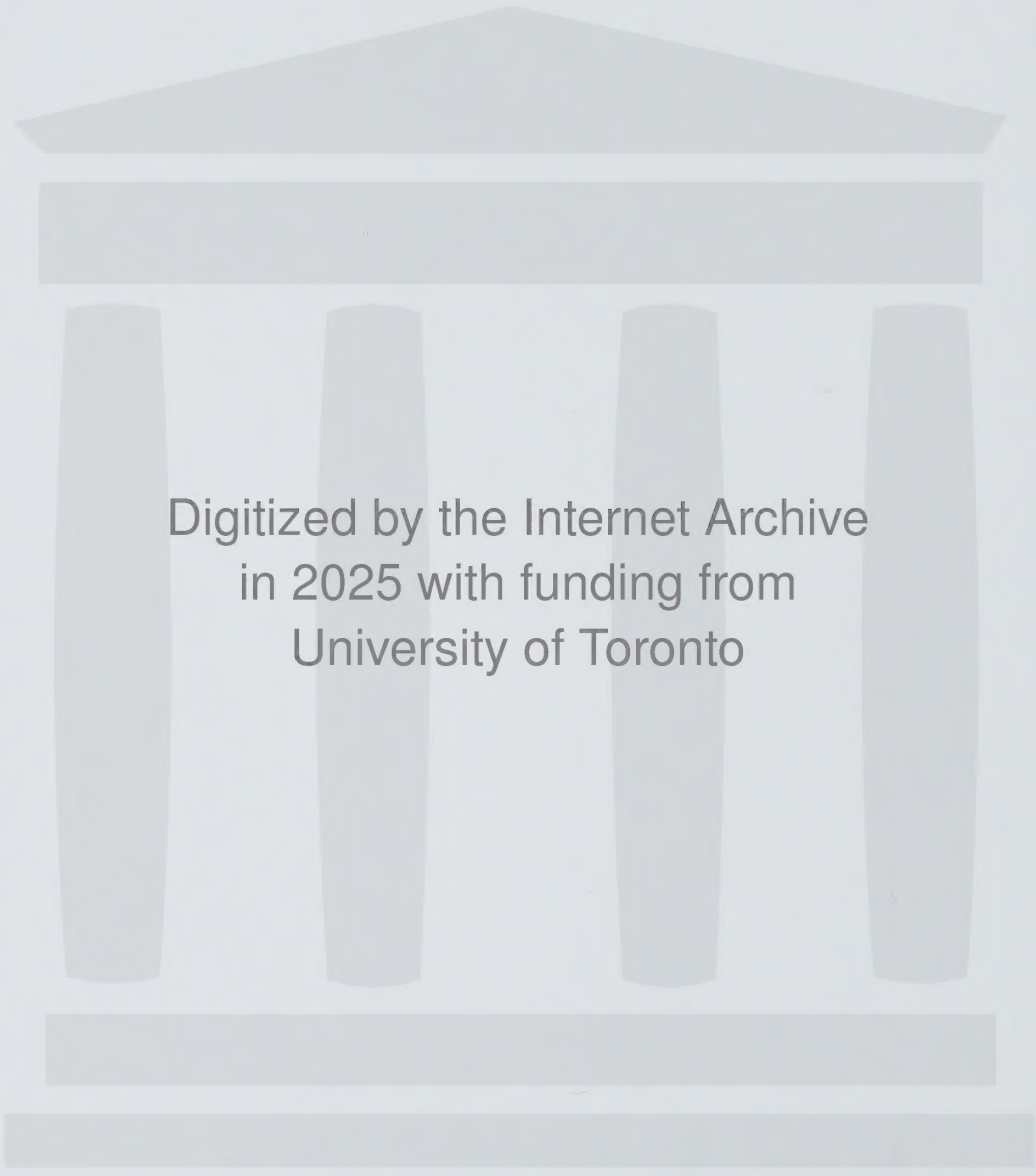
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TABLE OF CONTENTS

Principal Questionnaire 1

Teacher Questionnaire 7

Student Questionnaire (Includes Calculator Questions) 13

Student Assessment Booklet 1 22

Student Assessment Booklet 2 33

Student Assessment Booklet 3 45

Student Assessment Booklet 4 57

Student Assessment Booklet 5 70

Scoring Guide: Student Assessment Booklets 83

Mental Computation Questions 106

Scoring Key – Mental Computation Questions 107

Observation Booklet 1 108

Observation Booklet 2 111

Observation Booklet 3 114

Observation Booklet 4 118

Observation Booklet 5 122

Observation Booklet 6 124

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PRINCIPAL QUESTIONNAIRE

Provincial Reviews Mathematics

Grade 8
Grade 10, General Level
Grade 12, Advanced Level

Ministry of Education
Program Implementation and Review Branch

PROVINCIAL REVIEWS

MATHEMATICS

PRINCIPAL QUESTIONNAIRE

This questionnaire has been designed to collect information for the Provincial Reviews of Mathematics in the Intermediate and Senior Divisions. It will cover Mathematics for Grade 8; Grade 10, General Level; and Grade 12, Advanced Level. You are asked to respond to the questions relating only to the grade(s) in your school that are included in the review.

We have tried to limit the questions to those we consider important in order to minimize the time required to complete the questionnaire. ***It may be necessary for you to consult with teachers or the department head for some questions.***

Please answer these questions directly on the questionnaire. Return it, when completed, by mail directly to the Ministry of Education in the enclosed stamped pre-addressed envelope by ***February 24, 1990.***

No information will be published or made available which will allow the identification of any individual school principal.

If you have questions please call your local Provincial Review Coordinator for the Provincial Reviews at your local regional office of the Ministry of Education.

Thank you for your cooperation.

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PRINCIPAL QUESTIONNAIRE

1989-1990
Provincial Reviews

For questions 1 to 5, write your answers in the boxes provided.

1. **How many students are enrolled in your school?** (Thousands, Hundreds, Tens, Ones) 21–24

2. **How many students are enrolled in Grade 8 Mathematics?** *(Include both semesters if applicable.)* 25–28

3. **How many students are enrolled in the following in your school?** *(Include both semesters if applicable.)*

Grade 10 Mathematics, Basic, General and Advanced Levels	29–32
Grade 10 Mathematics, General Level only	33–36

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4. **How many students are enrolled in the following in your school?** *(Include both semesters if applicable.)*

	Thousands, Hundreds, Tens, Ones	
Grade 12 Mathematics, Basic, General and Advanced Levels		37–40
Grade 12 Mathematics, Advanced Level only		41–44

5. **What is the time allocation for mathematics instruction in your school?**

	Hundreds, Tens, Ones	
Number of hours per course per year - **Grade 8**		45–47
Number of hours per course per year - **Grade 10, General Level**		48–50
Number of hours per course per year - **Grade 12, Advanced Level**		51–53

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Answer the following questions by circling the number that corresponds to your response for the appropriate grade level(s).

6. **Which of the following best describes the community served by your school?**

Urban/Suburban area	1	
Rural area	2	54
Isolated area	3	

7. **Which of the following applies to the scheduling of your mathematics program?**

	Full Year	Semestered	Other	
Grade 8	1	2	3	55
Grade 10, General Level	1	2	3	56
Grade 12, Advanced Level	1	2	3	57

	YES	NO	
8a) **Is there an Immersion French/Extended French program in your school?** Questions 8a and 8b do not apply to French-language schools.	1	2	58

(If NO, go to Question 9.)

8b) **If YES, which of the following mathematics courses are taught in French?**

	YES	NO	
Grade 8 Mathematics	1	2	59
Grade 10 Mathematics, General Level	1	2	60
Grade 12 Mathematics, Advanced Level	1	2	61

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9. **About how often do teachers in your school meet for the purpose of discussing the teaching of mathematics?**

Grade 8

Once every week	1	
Once every two or three weeks	2	
Once every month or second month	3	62
Fewer than 5 times per year	4	
Never	5	

Grade 10, General Level

Once every week	1	
Once every two or three weeks	2	
Once every month or second month	3	63
Fewer than 5 times per year	4	
Never	5	

Grade 12, Advanced Level

Once every week	1	
Once every two or three weeks	2	
Once every month or second month	3	64
Fewer than 5 times per year	4	
Never	5	

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10. **How much emphasis is placed on the following planning documents for mathematics?**

Grade 8	None	Some	A lot	
Ministry of Education guidelines	1	2	3	65
School board documents	1	2	3	66
School-level planning documents/course of study	1	2	3	67

Grade 10, General Level	None	Some	A lot	
Ministry of Education guidelines	1	2	3	68
School board documents	1	2	3	69
School-level planning documents/course of study	1	2	3	70

Grade 12, Advanced Level	None	Some	A lot	
Ministry of Education guidelines	1	2	3	71
School board documents	1	2	3	72
School-level planning documents/course of study	1	2	3	73

	YES	NO	
11. **Does your school board have a procedure for regularly reviewing mathematics programs?**	1	2	74

	YES	NO	
12. **Does your school have a procedure for regularly reviewing mathematics programs?**	1	2	75

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13. **When was the mathematics program last reviewed by either the school or the school board?**

Grade 8		
Has not occurred	1	
Last school year (1988-89)	2	
Two to four years ago	3	76
Five years or more	4	

Grade 10, General Level		
Has not occurred	1	
Last school year (1988-89)	2	
Two to four years ago	3	77
Five years or more	4	

Grade 12, Advanced Level		
Has not occurred	1	
Last school year (1988-89)	2	
Two to four years ago	3	78
Five years or more	4	

(If a mathematics review has NOT occurred, go to Question 16.)

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14. If a mathematics review was conducted, which of the following components did it include?

Grade 8	YES	NO	
Review of planning documents	1	2	79
Review of teaching practices	1	2	80
Review of evaluation practices in schools	1	2	81
Review of resources	1	2	82
Administration of achievement test	1	2	83

Grade 10, General Level	YES	NO	
Review of planning documents	1	2	84
Review of teaching practices	1	2	85
Review of evaluation practices in schools	1	2	86
Review of resources	1	2	87
Administration of achievement test	1	2	88

Grade 12, Advanced Level	YES	NO	
Review of planning documents	1	2	89
Review of teaching practices	1	2	90
Review of evaluation practices in schools	1	2	91
Review of resources	1	2	92
Administration of achievement test	1	2	93

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15. What changes occurred as a result of the last review of the mathematics program?

Grade 8 There was a change in:	YES	NO	
Teaching objectives	1	2	94
Sequence and timing of programs	1	2	95
Teaching strategies	1	2	96
Student evaluation practices	1	2	97
School resources	1	2	98

Grade 10, General Level There was a change in:	YES	NO	
Teaching objectives	1	2	99
Sequence and timing of programs	1	2	100
Teaching strategies	1	2	101
Student evaluation practices	1	2	102
School resources	1	2	103

Grade 12, Advanced Level There was a change in:	YES	NO	
Teaching objectives	1	2	104
Sequence and timing of programs	1	2	105
Teaching strategies	1	2	106
Student evaluation practices	1	2	107
School resources	1	2	108

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16. **Outside of regular professional development days, what activities or courses do teachers in your school engage in for the purpose of professional development for the teaching of mathematics?**

Grade 8	YES	NO	
Seminars/workshops	1	2	109
Visiting other classrooms	1	2	110
Conferences	1	2	111
Peer coaching/Job shadowing	1	2	112
Credit courses	1	2	113
Professional Reading	1	2	114

Grade 10, General Level	YES	NO	
Seminars/workshops	1	2	115
Visiting other classrooms	1	2	116
Conferences	1	2	117
Peer coaching/Job shadowing	1	2	118
Credit courses	1	2	119
Professional Reading	1	2	120

Grade 12, Advanced Level	YES	NO	
Seminars/workshops	1	2	121
Visiting other classrooms	1	2	122
Conferences	1	2	123
Peer coaching/Job shadowing	1	2	124
Credit courses	1	2	125
Professional Reading	1	2	126

Thank you for your cooperation in completing this questionnaire.

Please mail it back to the Ministry of Education in the stamped pre-addressed envelope by ***February 24, 1990****.*

1989-1990

TEACHER QUESTIONNAIRE

Provincial Review Mathematics Grade 8

PROVINCIAL REVIEWS

Ministry of Education
Program Implementation and Review Branch

MATHEMATICS

TEACHER QUESTIONNAIRE

This questionnaire has been designed to collect information for the Provincial Review of Mathematics in the Intermediate Division. ***It will cover the Grade 8 Mathematics program.***

We have tried to limit the questions to those we consider important in order to minimize the time required to complete the questionnaire.

Please answer these questions directly on the questionnaire. Return it, when completed, by mail directly to the Ministry of Education in the enclosed stamped pre-addressed envelope by ***February 24, 1990****.*

No information will be published or made available which will allow the identification of any individual teacher.

If you have questions please call the Provincial Review Coordinator for Provincial Reviews at your local regional office of the Ministry of Education.

Thank you for your cooperation.

TEACHER QUESTIONNAIRE

Please answer each question by making a circle around the number that corresponds to your response.

SECTION I: PERSONAL/PROFESSIONAL BACKGROUND

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1. Are you male or female?

Male	1	21
Female	2	

2. How many years full-time teaching experience do you have? *(Include the current year and round to the nearest year any part-time experiences you have.)*

1 year	1	22
2 to 5 years	2	
6 to 10 years	3	
11 or more years	4	

3. How many years have you spent teaching mathematics? *(Include the current year and round to the nearest year any part-time experiences you have.)*

	Elementary	Secondary	For Ministry Use Only
1 year	1	1	
2 to 5 years	2	2	23 Elem
6 to 10 years	3	3	
11 or more years	4	4	24 Sec

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4. How many full-year courses in mathematics methods were included in your teacher education?

No instruction in mathematics methods	1	25
Some instruction as part of a general course	2	
One full course in mathematics methods	3	
Two or more full courses in mathematics methods	4	

5. How many full-year university courses do you have in mathematics?

Zero	0	26
One	1	
Two	2	
Three	3	
Four	4	
Five or more	5	

6. How many courses in measurement and evaluation or testing were included in your teacher training and/or graduate courses?

Zero	0	27
One	1	
Two	2	
Three or more	3	

7. Have you received training on the instructional use of computers with respect to the teaching of mathematics?

Yes	1	28
No	2	

SECTION II: TEACHING PRACTICES

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8. What importance do you place on the instruction of the following topics?

	Not Important	Important	Very Important	
Whole Numbers and Decimals	1	2	3	29
Factors, Powers and Square Roots	1	2	3	30
Fractions and Decimals	1	2	3	31
Ratio and Rate	1	2	3	32
Percent	1	2	3	33
Integers	1	2	3	34
Organization and Representation of Data	1	2	3	35
Variables, Formulas and Equations	1	2	3	36
Measurement	1	2	3	37
Constructions	1	2	3	38
Properties of Plane Figures	1	2	3	39
Three-Dimensional Geometry	1	2	3	40
Transformations	1	2	3	41
Calculator Skills	1	2	3	42
Problem Solving	1	2	3	43

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9. How much time per week outside of class do you think that the average student in your class will take to complete his/her mathematics homework assignments?

Less than 1 hour	1	
1 to 2 hours	2	44
Between 2 and 3 hours	3	
3 hours or more	4	

10. Do your students of mathematics have access to computers?

Yes	1	45
No (Go to Question 13)	2	

11. Approximately what percentage of time do your mathematics students spend using computers per week? *(Write the percentage in the space provided.)*

Hundreds ☐ Tens ☐ Ones ☐ %

46–48

12. Do you encourage your mathematics students to use computers to do any of the following?

	Yes	No	
To check answers to exercises	1	2	49
To practice new concepts	1	2	50
To learn new concepts and skills	1	2	51
To take tests	1	2	52
As an aid to do projects	1	2	53

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13. In your mathematics classes how often are calculators used?

Often (during every or almost every class)	1	
Occasionally (during about half the lessons)	2	
Rarely	3	54
Never	4	

14. Do you encourage your mathematics students to use calculators to do any of the following?

	Yes	No	
To check answers to exercises	1	2	55
To practice new concepts	1	2	56
To learn new concepts and skills	1	2	57
For use during tests	1	2	58
As an aid to do projects	1	2	59

15. How much emphasis is placed on each of the following in preparing lessons in mathematics?

	Not Available	None	Some	A lot	
Ministry of Education guideline	0	1	2	3	60
Board materials	0	1	2	3	61
Textbook or teacher's edition of textbook	0	1	2	3	62
Materials prepared by yourself or other teachers in your school	0	1	2	3	63
Journals or other teacher reference books	0	1	2	3	64
Commercially-produced supplementary materials	0	1	2	3	65
Materials from teacher education courses	0	1	2	3	66
Materials from your inservice workshops, conferences and seminars	0	1	2	3	67
Suggestions from students	0	1	2	3	68

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16. What percentage of time during the school year do you use each of the following methods or aids for the teaching of mathematics? *(Write the percentages in the spaces provided. They should total 100%.)*

	Hundreds	Tens	Ones		
A chalkboard and/or projector presentation to the class				%	69–71
Teacher demonstration with concrete materials to the class				%	72–74
Students working cooperatively in groups				%	75–77
Students working individually				%	78–80

17. Which of the following materials do you have access to during the teaching of mathematics?

	Yes	No	
Blackline masters (Photocopy masters)	1	2	81
Commercially produced audio-visual materials	1	2	82
Dot paper/Grid paper	1	2	83
Semi-transparent mirror	1	2	84
Geoboards	1	2	85
Pattern blocks, geometric solids	1	2	86
Geometry set	1	2	87
Student-generated materials	1	2	88
Textbooks	1	2	89

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18. How much emphasis do you place on each of the following in your mathematics class?

	None	Some	A lot	
Blackline masters (photocopy masters)	1	2	3	90
Commercially produced audio-visual materials	1	2	3	91
Dot paper/Grid paper	1	2	3	92
Semi transparent mirror	1	2	3	93
Geoboards	1	2	3	94
Pattern blocks and geometric solids	1	2	3	95
Geometry set	1	2	3	96
Student-generated materials	1	2	3	97
Textbooks	1	2	3	98

19. What percentage of time is devoted to the problem solving process?
(Write the percentage in the space provided.)

Hundreds ☐ Tens ☐ Ones ☐ % 99–101

20. Which of the following best describes the problem solving component of your mathematics program?

I teach problem solving as a separate unit. 1

I integrate problem solving into the mathematics programs throughout the year. 2 102

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21. What approaches do you use in teaching problem solving?

	Yes	No	
I provide students with many puzzles and problems to solve.	1	2	103
I provide students with a systematic approach to solving problems. (e.g. understand, plan, solve, look back.)	1	2	104
I teach specific strategies for solving problems. (e.g. guess and check, make a list, draw diagram, etc.)	1	2	105
I encourage students to develop their own strategies.	1	2	106

22. How are the solutions to problems in mathematics dealt with by the students?

	Yes	No	
Students discuss their solutions with each other.	1	2	107
Students report their results to the whole class.	1	2	108
Students write up their solutions or the results of their discoveries and present them to the teacher.	1	2	109

23. Do you use diagnostic pre-tests in your mathematics class?

Never 1

Sometimes 2 110

Often 3

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24. On average, how often do you assess your students' learning of mathematics skills and concepts?

Less than once per month	1	
Once per month	2	
Twice per month	3	111
Three times per month	4	
Four times per month or more	5	

25. In mathematics, what percent of the students' final mark is determined through the use of the following: *(Write the percentage in the space provided. The total for the grade should add up to 100%.)*

	Hundreds	Tens	Ones		
Quizzes or short tests				%	112–114
Cumulative tests or end of unit tests				%	115–117
Formal examinations				%	118–120
Observation of student behaviour				%	121–123
Peer/Self evaluation				%	124–126
Others (Projects, assignments, etc.)				%	127–129

Thank you for your cooperation in completing this questionnaire. Please mail it back to the Ministry of Education in the pre-addressed envelope by **February 24, 1990.**

STUDENT QUESTIONNAIRE

MATHEMATICS

GRADE 8

PROVINCIAL REVIEWS

Ministry of Education
Program Implementation and Review Branch

INSTRUCTIONS

1. Make sure your Student Answer Sheet is turned to the side marked **PART A: STUDENT INFORMATION**. Use an ***HB pencil*** to fill out your answer sheet. Be sure you have an ***eraser*** and a ***calculator*** available as well.

   Check to make sure you have filled in your **name**, the name of **your school board**, **your school**, and **your mathematics teacher** at the top of the Student Answer Sheet. Also make sure you have filled in all the appropriate bubbles at the top of the Student Answer Sheet.

2. Do the sample question below. To record your answer, fill in the correct bubble under the word **EXAMPLE** on your answer sheet.

   EXAMPLE What year is this?

   A) 1989
   B) 1990
   C) 1991
   D) 1992

   You should have filled in bubble **B** on your answer sheet since this is 1990.

3. There are two parts to this questionnaire:

   Part A (Student Information) includes questions about yourself, the things you do and how you feel about mathematics.

   Part B (Calculator Questions) includes mathematics questions that you will answer using a calculator.

   You will be given all the time you need to complete the entire questionnaire.

4. Read each question in the questionnaire carefully.

   Next to each question number on your answer sheet, fill in the bubble that contains the letter corresponding to your response.

   Use an ***HB pencil.*** Erase completely any responses you want to change.

   Record all your answers on the Student Answer Sheet.

   If you have any questions about what you are supposed to do, ask your teacher.

PART A: STUDENT INFORMATION

Record your responses to the following questions in the STUDENT INFORMATION Section of your answer sheet.

1. **Are you male or female?**

   A) Male.
   B) Female.

2. **In which year were you born?**

   A) 1974 or before.
   B) 1975.
   C) 1976.
   D) 1977.
   E) 1978 or after.

3. **What language do you most often speak at home?**

   A) English
   B) French.
   C) Other.

4. **On average how much time out of school do you spend watching TV programs each day?**

   A) None at all.
   B) Up to 1 hour
   C) Between 1 and 2 hours.
   D) Between 2 and 3 hours.
   E) More than 3 hours.

5. **About how much time do you spend on mathematics homework each week?**

   A) I don't do any mathematics homework.
   B) Less than $\frac{1}{2}$ hour.
   C) $\frac{1}{2}$ hour to 1 hour.
   D) More than 1 hour.

6. **How often do you get help with mathematics from someone in your family?**

   A) Never or almost never.
   B) Occasionally.
   C) Often.

DO YOU LIKE DOING MATHEMATICS QUESTIONS THAT DEAL WITH:

7. **Whole Numbers, Fractions and Decimals?**

   A) Yes.
   B) No.
   C) I'm not sure.
   D) We do not do these kinds of questions.

8. **Factors, Powers and Square Roots?**

   A) Yes.
   B) No.
   C) I'm not sure.
   D) We do not do these kinds of questions.

9. **Ratio and Rate?**

   A) Yes.
   B) No.
   C) I'm not sure.
   D) We do not do these kinds of questions.

DO YOU LIKE DOING MATHEMATICS QUESTIONS THAT DEAL WITH:

10. Percent?

A) Yes.
B) No.
C) I'm not sure.
D) We do not do these kinds of questions.

11. Integers?

A) Yes.
B) No.
C) I'm not sure.
D) We do not do these kinds of questions.

12. Algebra?

A) Yes.
B) No.
C) I'm not sure.
D) We do not do these kinds of questions.

13. Graphs?

A) Yes.
B) No.
C) I'm not sure.
D) We do not do these kinds of questions.

14. Measurement?

A) Yes.
B) No.
C) I'm not sure.
D) We do not do these kinds of questions.

DO YOU LIKE DOING MATHEMATICS QUESTIONS THAT DEAL WITH:

15. Constructions in Geometry?

A) Yes.
B) No.
C) I'm not sure.
D) We do not do these kinds of questions.

16. Two-Dimensional Figures?

A) Yes.
B) No.
C) I'm not sure.
D) We do not do these kinds of questions.

17. Three-Dimensional Objects?

A) Yes.
B) No.
C) I'm not sure.
D) We do not do these kinds of questions.

18. Transformations?

A) Yes.
B) No.
C) I'm not sure.
D) We do not do these kinds of questions.

19. Problem Solving?

A) Yes.
B) No.
C) I'm not sure.
D) We do not do these kinds of questions.

The following questions ask about what you and your class do when you are learning mathematics. Think about what happens in your mathematics class.

20. How often do you do mathematics at the board or on the overhead projector?

A) Almost every day.
B) Once a week or so.
C) Only once in a while.
D) Never

21. How often is mathematics presented to the whole class as a group?

A) Almost every day
B) Once a week or so.
C) Only once in a while
D) Never

22. How often do you do mathematics in small groups?

A) Almost every day
B) Once a week or so
C) Only once in a while.
D) Never.

23. How often do you do mathematics on your own in class?

A) Almost every day.
B) Once a week or so
C) Only once in a while.
D) Never.

24. How often do you do projects on mathematics topics?

A) Almost every day.
B) Once a week or so
C) Only once in a while.
D) Never.

25. How often do you do projects in other subjects that involve the use of mathematics?

A) Almost every day.
B) Once a week or so.
C) Only once in a while.
D) Never

26. How often do you write tests or quizzes in mathematics?

A) Almost every day.
B) Once a week or so
C) Only once in a while.
D) Never.

27. How often do you use a calculator to do mathematics in class?

A) Almost every day.
B) Once a week or so.
C) Only once in a while.
D) Never

28. How often do you use a computer to do mathematics in class?

A) Almost every day.
B) Once a week or so.
C) Only once in a while.
D) Never.

29. How often do you use a calculator for mathematics tests?

A) Almost always
B) Frequently.
C) Occasionally
D) Never.

30. Do you use a calculator at home?

A) No.
B) Yes, but not for mathematics schoolwork.
C) Yes, for mathematics schoolwork only.
D) Yes, for mathematics schoolwork and other things

31. Do you have a computer at home?

A) No.
B) Yes, but I don't use it.
C) Yes, I use it but not for mathematics schoolwork.
D) Yes, I use it for mathematics schoolwork only.
E) Yes, I use it for mathematics schoolwork and other things.

The following questions ask how you feel about the mathematics you are learning in school.

32. Do you think mathematics is:

A) more for males than females?
B) more for females than males?
C) for everyone equally?

33. I like mathematics.

A) Strongly agree
B) Agree.
C) Not sure.
D) Disagree.
E) Strongly disagree

34. Mathematics helps me outside of school.

A) Strongly agree.
B) Agree.
C) Not sure.
D) Disagree.
E) Strongly disagree.

35. Learning mathematics is mostly memorizing.

A) Strongly agree
B) Agree.
C) Not sure.
D) Disagree.
E) Strongly disagree.

36. I am good at mathematics.

A) Strongly agree.
B) Agree.
C) Not sure.
D) Disagree.
E) Strongly disagree.

37. It is important to know mathematics in order to get a good job.

A) Strongly agree
B) Agree.
C) Not sure.
D) Disagree.
E) Strongly disagree.

38. Mathematics is difficult for me.

A) Strongly agree.
B) Agree.
C) Not sure.
D) Disagree.
E) Strongly disagree.

39. When I do problems in mathematics, I usually have trouble understanding what the sentences say.

A) Strongly agree.
B) Agree.
C) Not sure.
D) Disagree.
E) Strongly disagree.

40. There are usually <u>different</u> ways to solve mathematical problems.

A) Strongly agree.
B) Agree.
C) Not sure.
D) Disagree.
E) Strongly disagree

WHEN YOU DON'T UNDERSTAND A PROBLEM IN MATHEMATICS DO YOU:

41. Try different ways to solve it on your own?

A) Often.
B) Sometimes.
C) Never.

42. Ask another student for help?

A) Often.
B) Sometimes.
C) Never.

43. Ask your teacher for help?

A) Often.
B) Sometimes.
C) Never

44. Wait and ask someone at home?

A) Often.
B) Sometimes.
C) Never.

45. Just give up?

A) Often.
B) Sometimes.
C) Never.

Leave Questions 46 to 48 blank on your answer sheet.

You have reached the end of the **Student Information** section.

Make sure you have answered all the questions up to **Number 45** on your answer sheet. Be sure you have erased carefully all the answers you have changed

Now begin **Part B**.

PART B: CALCULATOR QUESTIONS

Find the Calculator Questions section on your answer sheet.

Read each of the following questions carefully.

Next to each question number on your answer sheet, fill in the bubble that contains the letter corresponding to your response.

Use an HB pencil and be sure you have a calculator to use.

Make sure you begin with Question 51 on your answer sheet.

51. Calculate $85 \times 3 \times 7 \times 13 \times 37$.

A) 23 205

B) 286 195

C) 858 585

D) 877 455

52. The land areas of Canada's Atlantic Provinces are as follows:

Newfoundland	371 917 km^2
Prince Edward Island	5 678 km^2
Nova Scotia	53 045 km^2
New Brunswick	72 371 km^2

The total land area of Canada's Atlantic Provinces is:

A) 363 011 km^2

B) 503 011 km^2

C) 663 011 km^2

D) 37 193 011 km^2

53. A ticket for a concert costs $22.75. What is the greatest number of tickets that could be purchased for $90.00?

A) 2

B) 3

C) 4

D) 5

54. Evaluate $(25.7 \times 36.3) + (4.5 \times 86.2)$.

A) 1 320.81

B) 80 804.742

C) 81 742.152

D) 84 295.842

55. In a skating competition, Judeen had the following scores for her free-style performance in artistic impression

5.1	5.2	4.8	5.2	5.0	4.9	5.2	5.3

Which question below is best answered using a calculator?

A) What was her highest score?

B) Which score occurred most frequently?

C) What was her average score?

D) How many scores were lower than 5.0?

56. The distance on a map measures 6.4 cm. The actual distance is 2 688 km. On the scale used, 1 cm represents:

A) 42 km

B) 420 km

C) 1 720 km

D) 17 203.2 km

57. A charitable organization hopes to raise $375 000.00 during a 4-week campaign. The chart shows the results for the first 3 weeks.

WEEK	CONTRIBUTIONS & PLEDGES
FIRST	$102 029.32
SECOND	$158 318.68
THIRD	$ 80 142.75

In order to reach its goal, how much needs to be raised in the 4th week?

A) $3 450.92

B) $34 049.08

C) $34 509.25

D) $340 490.75

58. Express $4\frac{6}{7}$ as a decimal correct to two decimal places.

A) 2.43

B) 3.86

C) 4.57

D) 4.86

59. A car rental company charges $39.00 a day plus $0.18 for each kilometre travelled. For **n** kilometres per day this would be $(0.18n + 39). What is the total charge for a one-day trip of 370 km?

A) $105.60

B) $409.18

C) $2 597.40

D) $14 437.02

60. To the nearest cent, what is 13.5% of $425?

A) $5.74

B) $55.25

C) $57.38

D) $573.80

61. The Super Sub Shop sold the Super Sub Sandwiches last week-end at $3.85 each. The week-end sales were as follows:

Friday	29
Saturday	67
Sunday	41

The total value of the week-end sales of Super Sub Sandwiches is:

A) $140 85

B) $527 45

C) $1 682.45

D) $5 621 00

62. A snowmobile sells for $4 274.00 cash or for 36 monthly payments of $135.39 each. How much is saved by paying cash?

A) $31.56

B) $60.00

C) $315.68

D) $600.04

YOU HAVE NOW FINISHED.

Make sure you have answered all the questions in **Part B** on your answer sheet and that you have erased carefully all the answers you have changed.

Please raise your hand to let the teacher know you have finished.

Thank you for your participation.

STUDENT ASSESSMENT BOOKLET

Grade 8 Mathematics

1

Program Implementation & Review Branch
Ministry of Education

INSTRUCTIONS

1. Make sure your *Mathematics Student Answer Sheet* is turned to side 1 (title at top of page). Use an ***HB pencil*** to fill out your answer sheet.

   Be sure you have the following materials available:

   - eraser
   - ruler
   - protractor
   - compasses
   - paper (for folding or tracing)
   - transparent mirror (if available)

2. Fill in your **name**, the name of **your school board**, **your school**, and **your mathematics teacher** at the top of the *Mathematics Student Answer Sheet.* Also make sure you have filled in all the appropriate bubbles at the top of the sheet.

3. Do the sample question below. To record your answer, fill in the correct bubble under the word **EXAMPLE** on your answer sheet.

   EXAMPLE What year is this?

   A) 1989
   B) 1990
   C) 1991
   D) 1992

   You should have filled in bubble **B** on your answer sheet since this is 1990.

4. There are 40 questions in this **Student Assessment Booklet**. Some are multiple-choice and will be answered on the *Mathematics Student Answer Sheet.* Others are open-ended and will be answered directly in this booklet.

   You will be given all the time you need to complete the entire booklet.

5. Read each question in the booklet carefully. Next to each question number on your answer sheet, fill in the bubble that contains the letter corresponding to your response. Erase completely any responses you want to change.

6. On the front cover you will find a booklet number. On your answer sheet, find the box that corresponds to your booklet number. Be sure to record your answers in this box.

   If you have any questions about what you are supposed to do, ask your teacher.

1. One year, the Toronto Blue Jays had a total attendance figure of 2 486 391. What digit is in the hundred thousands place?

   A) 2

   B) 4

   C) 6

   D) 8

2. Calculate 34 + 30.6 + 47.08.

   A) 50.48

   B) 77.68

   C) 111.14

   D) 111.68

3. Choose the correct answer:

$$\begin{array}{r} 9.65 \\ \times\ 40.6 \\ \hline \end{array}$$

   A) 39.179

   B) 50.25

   C) 55.9

   D) 391.79

4. The square root of 81 is:

   A) 81

   B) 9

   C) 3

   D) 2

5. The number 10 000 written as a power of ten is:

   A) 10^2

   B) 10^3

   C) 10^4

   D) 10^5

6. Calculate $\frac{7}{8} - \frac{1}{4} - \frac{1}{2}$.

   A) $\frac{1}{8}$

   B) $\frac{9}{14}$

   C) $\frac{5}{8}$

   D) $\frac{5}{2}$

7. Calculate $\frac{3}{4} + \frac{2}{3}$.

   A) $\frac{6}{12}$

   B) $\frac{2}{4}$

   C) $\frac{5}{7}$

   D) $\frac{17}{12}$

8. The fraction $\frac{5}{8}$ written in decimal form is:

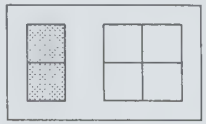
   A) 1.6

   B) 0.625

   C) 0.58

   D) 0.375

9. A shaded figure and an unshaded figure are shown below.



   The ratio of the area of the shaded figure to the area of the unshaded figure is:

   A) 1:4

   B) 1:2

   C) 4:1

   D) 2:1

10. In a school of 800 pupils, 300 are boys. The ratio of the number of boys to the number of girls is:

    A) 3:8

    B) 8:3

    C) 5:3

    D) 3:5

11. Which ratio is equivalent to 3:4?

A) 9:12

B) 8:6

C) 1:3

D) 8:9

12. The fraction equivalent to 5 % is:

A) $\frac{1}{5}$

B) $\frac{1}{20}$

C) $\frac{5}{10}$

D) $\frac{5}{1}$

13. Nunzio received a mark of 20 out of 80 on a science test. What percent did he receive on the test?

A) 40 %

B) 25 %

C) 20 %

D) 4 %

14. What is the interest for 1 year on a loan of $800 at 13 % per year?

A) $104

B) $800

C) $904

D) $1 704

15. A tape cassette costs $8.29. At 8 %, what is the sales tax to the nearest cent?

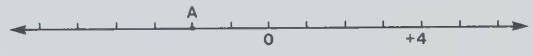
A) 67¢

B) 66¢

C) 65¢

D) 63¢

16. Which integer is represented by point **A** on the number line?



A) +3

B) +2

C) −2

D) −4

17. Calculate (+20) + (−5).

A) −15

B) −7

C) +15

D) +25

18. Calculate (−8) − (−7)

A) +15

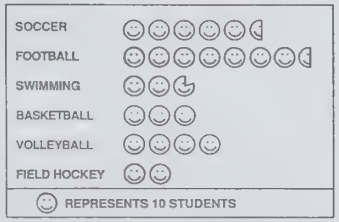
B) +1

C) −1

D) −15

19. The diagram below shows the number of students on some school teams.

STUDENTS ON SCHOOL TEAMS



What was the total number of students on the football and soccer teams?

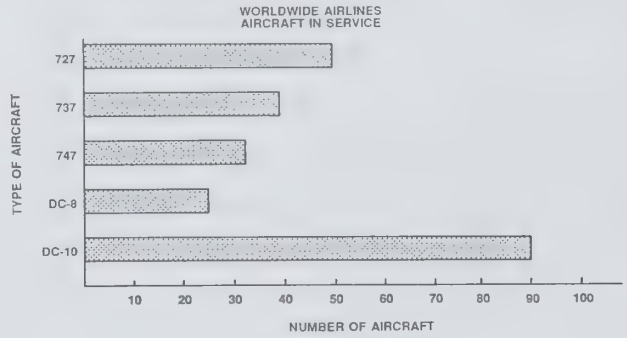
A) 130

B) 120

C) 13

D) 12

20. The graph below shows the number of aircraft for Worldwide Airlines.



The total number of aircraft Worldwide Airlines has in service is about:

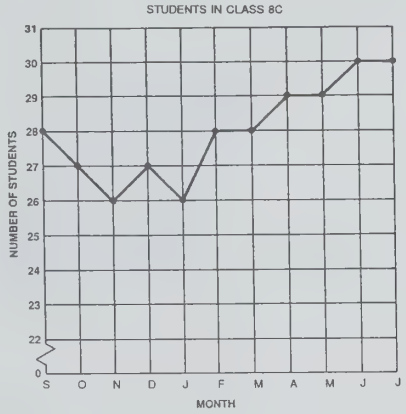
A) 235

B) 250

C) 265

D) 280

21. The line graph below shows the enrolments in class 8C at the beginning of each month of 1987-88.



During which month did the number of students increase the most?

A) January

B) September

C) June

D) May

22. What is the value of the expression $5x - 9y$ when $x = 7$ and $y = 3$?

A) −52

B) 8

C) 26

D) 62

23. The price of tennis balls is as follows:

1 tennis ball	$ 3.50
2 tennis balls	$ 7.00
3 tennis balls	$10.50

If **n** represents the number of tennis balls, which formula can be used to find the cost of any number of tennis balls?

A) $3.50\mathbf{n}$

B) $3.50 + 3\mathbf{n}$

C) $3.50 + 2\mathbf{n}$

D) $3.50 + \mathbf{n}$

24. A number is doubled and the result is decreased by 5. An expression for this information is:

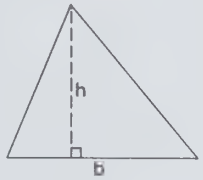
A) $5 - 2n$

B) $n - 2 - 5$

C) $2n - 5$

D) $n - 2 \times 5$

25. The triangle below has base **b** and height **h**.



The expression used to find the area of the triangle is:

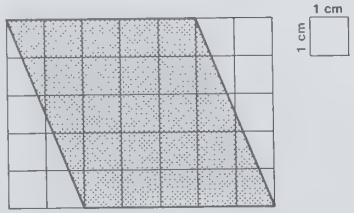
A) $\frac{1}{2}b + h$

B) $b + h$

C) $2(b \times h)$

D) $\frac{1}{2}(b \times h)$

26. Each small square below has an area of 1 cm^2.



What is the area of the shaded parallelogram in the above diagram?

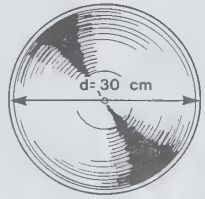
A) 12.5 cm^2

B) 20 cm^2

C) 25 cm^2

D) 30 cm^2

27. A record has a diameter of 30 cm.



C ÷ **d** = π, and π is approximately equal to 3.14. The circumference (**C**) of this record is closest to:

A) 85 cm

B) 95 cm

C) 105 cm

D) 115 cm

28. To convert a measurement from millilitres to litres:

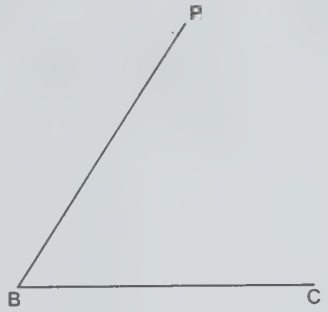
A) multiply the number of millilitres by 100.

B) multiply the number of millilitres by 1 000

C) divide the number of millilitres by 100.

D) divide the number of millilitres by 1 000

29. Complete the construction of △ ABC below making ∠BCA = 43°.
Point **A** must be on BP.



The length of AC in millimetres is between:

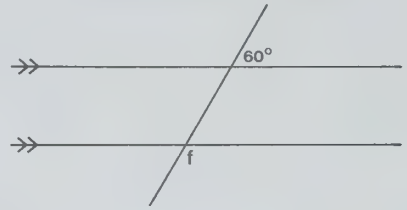
A) 47 and 54

B) 55 and 62

C) 63 and 70

D) 71 and 78

30. The diagram below shows a straight line intersecting two parallel lines.



What is the measure of angle f?

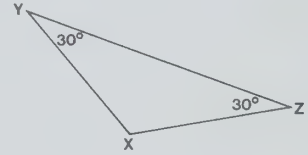
A) 30°

B) 60°

C) 120°

D) 180°

31. In the triangle below, the measures for ∠Y and ∠Z are given.



What is the measure of ∠X?

A) 30°

B) 60°

C) 90°

D) 120°

32. Which of the following figures is not a drawing of a prism?

A)

B)

C)

D)

33. The front, top, and side views of a three-dimensional object are given below.

What type of object could be represented by these views?

A) tetrahedron

B) triangular pyramid

C) triangular prism

D) trapezoid

34. The diagram below shows a figure and its image.

The image in the above diagram was formed by:

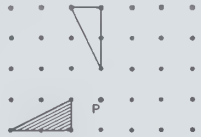
A) a translation.

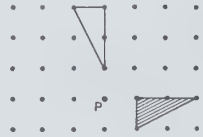
B) a rotation.

C) a reflection.

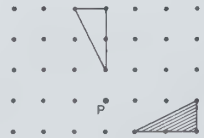
D) a reduction.

35. Which of the following illustrates a triangle and its image under a rotation of $\frac{1}{4}$ turn about point P?

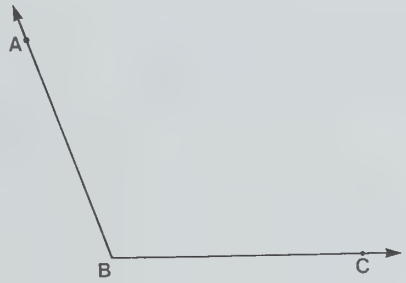
A) 

B) 

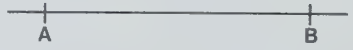
C)

D) 

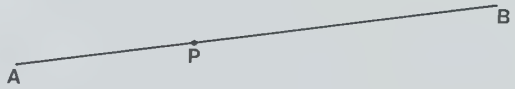
36. Bisect $\angle ABC$.



37. On the given line, construct a line segment CD congruent to line segment AB.



38. Construct a line through **P** perpendicular to AB.



SHOW YOUR WORK

39. Peter and Juanita decided to start saving money. Peter can save 3 dollars each month and Juanita can save 5 dollars each month. At this rate, after how many months will Juanita have exactly 10 dollars more than Peter?

SHOW YOUR WORK

40. Four students came to a meeting. If each one shook hands with everyone else once, how many handshakes would there be altogether?

STUDENT ASSESSMENT BOOKLET

MATHEMATICS

Grade 8 Mathematics

2

PROVINCIAL REVIEWS

Program Implementation & Review Branch
Ministry of Education

INSTRUCTIONS

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   - protractor
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3. Do the sample question below. To record your answer, fill in the correct bubble under the word **EXAMPLE** on your answer sheet.

   EXAMPLE What year is this?

   A) 1989
   B) 1990
   C) 1991
   D) 1992

   You should have filled in bubble **B** on your answer sheet since this is 1990.

4. There are 40 questions in this **Student Assessment Booklet**. Some are multiple-choice and will be answered on the *Mathematics Student Answer Sheet*. Others are open-ended and will be answered directly in this booklet.

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   If you have any questions about what you are supposed to do, ask your teacher.

41. Which list has the numbers arranged from smallest to largest?

A) 6.045, 6.45, 6.5

B) 6.45, 6.5, 6.045

C) 6.045, 6.5, 6.45

D) 6.45, 6.045, 6.5

42. The first Canadian Prime Minister was Sir John A. MacDonald. He was born in Scotland in 1815. How many years ago was he born?

A) 125

B) 175

C) 185

D) 1 085

43. Choose the correct answer:

$$\begin{array}{r} 687 \\ \times\ 54 \\ \hline \end{array}$$

A) 6 203

B) 33 098

C) 36 778

D) 37 098

44. The number which is divisible by 2, 5 and 10 is:

A) 4 362

B) 5 890

C) 6 545

D) 7 304

45. The value of $2^2 + 5^2$ is:

A) 14

B) 29

C) 49

D) 50

46. Calculate $\frac{2}{3} \div \frac{3}{5}$.

A) $\frac{5}{2}$

B) $\frac{9}{10}$

C) $\frac{10}{9}$

D) $\frac{2}{5}$

47. Calculate $4\frac{1}{2} + \frac{3}{4}$.

A) $5\frac{1}{4}$

B) $5\frac{4}{6}$

C) $5\frac{1}{2}$

D) $5\frac{3}{8}$

48. The mixed fraction $2\frac{4}{5}$ as a decimal is:

A) 0.35

B) 0.8

C) 2.45

D) 2.8

49. The scale on a floor plan is 1:50. What length does 3 cm on the floor plan represent?

A) 150 cm

B) 100 cm

C) 30 cm

D) 16.6 cm

50. Penelope sorted coins into piles of nickels, dimes and quarters. Each pile had the same value. A ratio to compare the number of nickels, dimes and quarters is:

A) 2:5:10

B) 2:10:5

C) 5:10:2

D) 10:5:2

51. A car travels at an average speed of 90 km/h. How long will it take to travel 225 km?

A) 2 h

B) 2.5 h

C) 3 h

D) 3.5 h

52. Rich sold a computer system for $2 500. He received a commission of 6 %. His commission was:

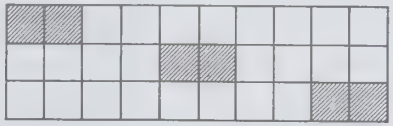
A) $150

B) $1 500

C) $2 350

D) $2 650

53. Some squares in the 3 × 10 grid below are shaded.



What percent of the 3 x 10 grid is shaded?

A) 20 %

B) 6 %

C) 3 %

D) $\frac{1}{5}$ %

54. Expressed as a percent, $\frac{3}{8}$ is:

A) 0.375 %

B) 3.75 %

C) 37.5 %

D) 375.0 %

55. Which of these integers is greater than –3?

A) 0

B) –4

C) –6

D) –10

56. Calculate (–2) – (+5).

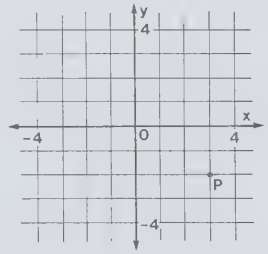
A) –7

B) –3

C) +3

D) +7

57. Point **P** is marked on the grid below.



What are the coordinates of point **P**?

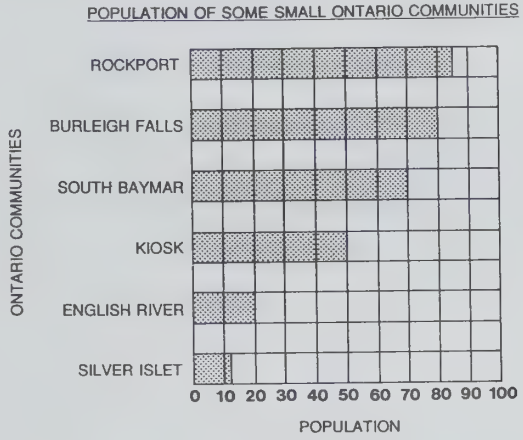
A) (3, –2)

B) (–2, 3)

C) (–3, 2)

D) (2, –3)

58. There are many small communities in Ontario with populations less than 100 persons. The bar graph below shows six of these communities.



How many more people live in Rockport than in Kiosk?

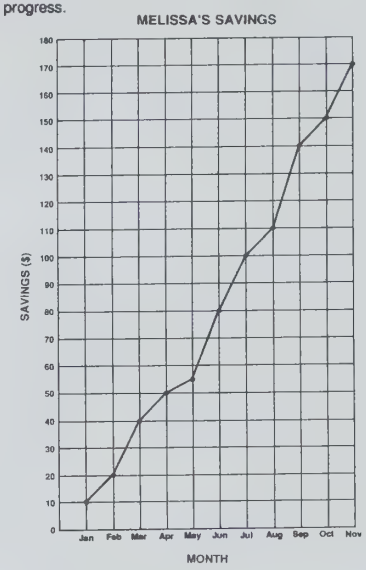
A) 20

B) 25

C) 30

D) 35

59. Melissa started a savings plan in order to save $160 to purchase a new bicycle. The graph below shows her progress.


MELISSA'S SAVINGS
SAVINGS ($)
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov
MONTH

At the end of which month did Melissa have exactly one half the amount of money needed for her bicycle?

A) September

B) May

C) June

D) July

60. For which of the following situations would a circle graph be the most suitable form of illustration?

A) the speeds at which you ran your last 6 races

B) the way you spent your time during the last 24 h

C) your increase in height from birth to the present

D) the temperature over a 5-day period

61. If $n = 2$, then $19 - 2n$ equals:

A) -3

B) 15

C) 19

D) 23

62. Sixteen added to the product of three and a number is 31. An equation for this statement is:

A) $3m - 16 = 31$

B) $3m \times 16 = 31$

C) $3m + 16 = 31$

D) $3(16) + m = 31$

63. In the equation, $50 = 7y + 1$, what is the value of **y**?

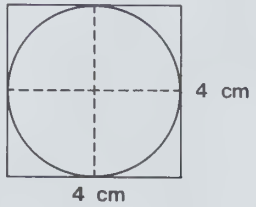
A) 9

B) 8

C) 7

D) 6

64. The diagram below shows a circle inside a square with sides 4 cm long.



How much larger is the area of the square than the area of the circle? (use $\pi = 3.14$)

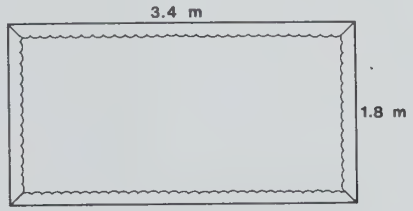
A) 28.56 cm^2

B) 16 cm^2

C) 12.56 cm^2

D) 3.44 cm^2

65. Stan and Marcia are decorating a bulletin board in their classroom. It measures 1.8 m by 3.4 m.



The total length of border decoration needed to surround the board is:

A) 5.2 m

B) 6.12 m

C) 8.6 m

D) 10.4 m

66. The width of a chalkboard is 5 m. This is equivalent to:

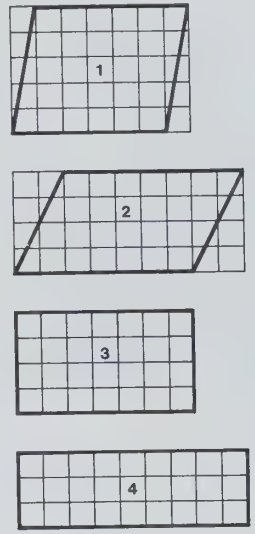
A) 500 mm

B) 500 cm

C) 500 dm

D) 500 km

67. Four figures are drawn below with dark black lines.



Which two figures above have the same area?

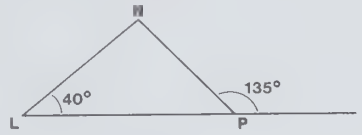
A) 2 and 4

B) 1 and 2

C) 3 and 4

D) 2 and 3

68. The diagram below shows a triangle and an external angle.



What is the measure of ∠LNP?

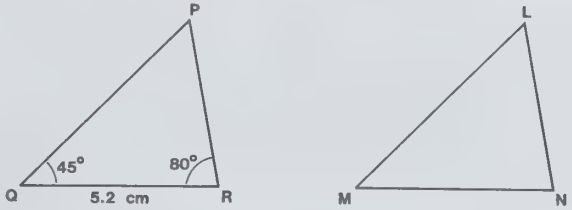
A) 45°

B) 70°

C) 95°

D) 175°

69. △LMN is congruent to △PQR.



Which statement is true?

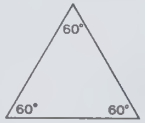
A) LM = 5.2 cm

B) ∠LMN = 65°

C) LN = 5.2 cm

D) ∠MLN = 55°

70. This triangle is called:



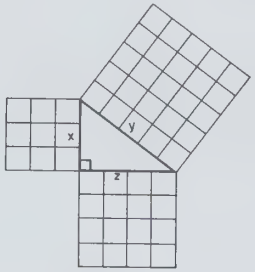
A) scalene

B) equilateral

C) obtuse

D) right-angled

71. In the triangle below, the lengths of the sides are represented by **x**, **y**, and **z**.



Which of the following statements is true?

A) $z^2 = x^2 + y^2$

B) $x^2 = y^2 + z^2$

C) $y^2 = x^2 + z^2$

D) $x = y + z$

72. Which line segment is congruent to line segment PQ?

A)

B)

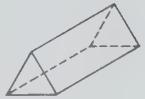
C)

D)

73. Which drawing represents a hexagonal prism?

A)

B)

C) 

D)

74. Complete the construction of $\triangle$ ABC below making AB = 5 cm and AC = 7 cm.

The measure of $\angle$BAC is between:

A) 112° and 118°

B) 105° and 111°

C) 98° and 104°

D) 91° and 97°

75. Which figure is an enlargement of the original figure by a scale factor of 2?

ORIGINAL

A)

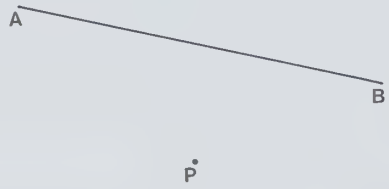
B)

C)

D)

76. Complete the construction of parallelogram ABCD.

77. Construct a line through **P** perpendicular to AB.



78. Complete the diagram below to show a triangular prism.

SHOW YOUR WORK

79. Toothpicks are arranged as follows:

FIGURE 1 FIGURE 2 FIGURE 3

If the pattern is continued, how many toothpicks are used in making the 10th figure?

SHOW YOUR WORK

80. John counted the legs of dogs and children at a dog show in the park. There were a total of 80 legs. If the difference between the number of children and the number of dogs was 1, how many dogs and children were there at the dog show?

STUDENT ASSESSMENT BOOKLET

MATHEMATICS

Grade 8 Mathematics

3

PROVINCIAL REVIEWS

Program Implementation & Review Branch
Ministry of Education

INSTRUCTIONS

1. Make sure your *Mathematics Student Answer Sheet* is turned to side 1 (title at top of page). Use an ***HB pencil*** to fill out your answer sheet.

   Be sure you have the following materials available:

   - eraser
   - ruler
   - protractor
   - compasses
   - paper (for folding or tracing)
   - transparent mirror (if available)

2. Fill in your **name**, the name of **your school board**, **your school**, and **your mathematics teacher** at the top of the *Mathematics Student Answer Sheet.* Also make sure you have filled in all the appropriate bubbles at the top of the sheet.

3. Do the sample question below. To record your answer, fill in the correct bubble under the word **EXAMPLE** on your answer sheet.

   EXAMPLE What year is this?

   A) 1989
   B) 1990
   C) 1991
   D) 1992

   You should have filled in bubble **B** on your answer sheet since this is 1990.

4. There are 40 questions in this **Student Assessment Booklet**. Some are multiple-choice and will be answered on the *Mathematics Student Answer Sheet.* Others are open-ended and will be answered directly in this booklet.

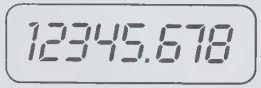
   You will be given all the time you need to complete the entire booklet.

5. Read each question in the booklet carefully. Next to each question number on your answer sheet, fill in the bubble that contains the letter corresponding to your response. Erase completely any responses you want to change.

6. On the front cover you will find a booklet number. On your answer sheet, find the box that corresponds to your booklet number. Be sure to record your answers in this box.

   If you have any questions about what you are supposed to do, ask your teacher.

81. Here is a calculator display.



Which digit is in the thousandths place?

A) 8

B) 6

C) 2

D) 1

82. Calculate 6.688 ÷ 0.38.

A) 0.176

B) 1.76

C) 17.6

D) 176

83. Which symbol (+, −, ×, ÷) must replace the box to make a true statement?

$$(4 + 6) \square\ 2 - 5 = 0$$

A) +

B) ÷

C) ×

D) −

84. Which one of the following is a perfect square?

A) 39

B) 42

C) 49

D) 99

85. All the factors of 12 are:

A) 1, 2, 3, 4, 6, 12

B) 2, 4, 6, 12

C) 2, 3, 4, 6

D) 1, 12

86. The number which is divisible by 2, 3, and 5 is:

A) 62 654

B) 24 030

C) 14 320

D) 13 036

87. Skates were on sale for $\frac{1}{3}$ off. The regular price was $60. How much was the sale price?

A) $10

B) $20

C) $30

D) $40

88. Calculate $\frac{3}{4} \div 2$.

A) $\frac{3}{8}$

B) $\frac{3}{2}$

C) $\frac{6}{4}$

D) 3

89. The ratio 6:5 written in fractional form is:

A) $\frac{1}{6}$

B) $\frac{1}{5}$

C) $\frac{5}{6}$

D) $\frac{6}{5}$

90. During a basketball game, Ahmed succeeded on 4 out of 7 of his shots and Jim sank 5 out of 9 of his shots. During this game, who was the more accurate?

A) Ahmed

B) Jim

C) neither

D) not enough information given

91. For the annual school play, the ratio of adult tickets sold to student tickets sold was 5:3. If 90 adult tickets were sold, what was the total number of tickets sold?

A) 54

B) 105

C) 144

D) 150

92. Expressed as a decimal 123 % is:

A) 0.123

B) 1.23

C) 12.3

D) 123.0

93. Nunzio received a mark of 29 out of 50 on a science test. What percent did he receive on the test?

A) 58 %

B) 50 %

C) 29 %

D) $14\frac{1}{2}$ %

94. The regular price of a shirt is $55. It is on sale at a discount of 30 %. If the sales tax is 8 %, how much money would you need to buy the shirt?

A) $16.50

B) $20.90

C) $38.50

D) $41.58

95. Which of the following represents integers listed in order from least to greatest?

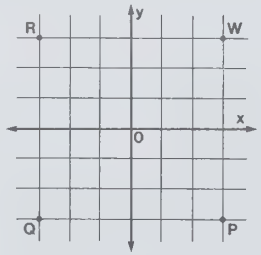
A) –6, –4, +2, +6

B) +2, +6, –4, –6

C) +2, +6, –6, –4

D) –6, +6, –4, +2

96. Four points are labelled on the following grid.



Which point is represented by the coordinates (–3,+3)?

A) W

B) P

C) R

D) Q

97. (+8) – (–2) is equivalent to:

A) (–8) + (–2)

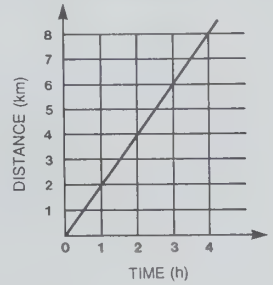
B) (+8) + (+2)

C) (–8) + (+2)

D) (+8) + (–2)

98. The graph below shows the distance travelled by a tractor during a period of 4 h.

DISTANCE TRAVELLED BY TRACTOR



How far does the tractor move in one hour?

A) 1 km

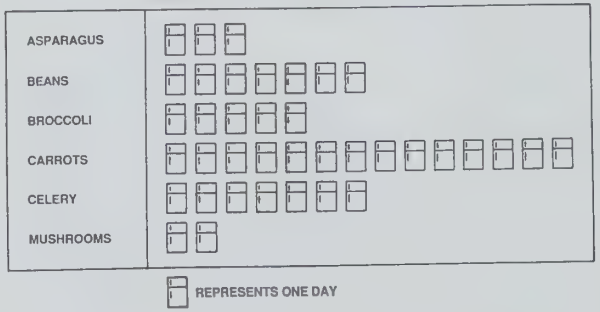
B) 2 km

C) 4 km

D) 8 km

99. The diagram below shows the number of days that different vegetables can be stored.

MAXIMUM STORAGE TIMES FOR FRESH VEGETABLES



According to the diagram, which vegetables can be stored for one week or longer?

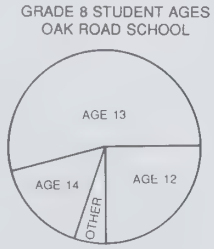
A) carrots, celery, and mushrooms

B) celery, carrots, and broccoli

C) beans, carrots, and celery

D) beans, carrots and broccoli

100. The circle graph below shows the ages of students in Grade 8.



According to the above graph, which statement is definitely true about Grade 8 students in Oak Road School?

A) There are absolutely no 15-year-olds.

B) There are definitely some 10-year-olds.

C) There are more 12-year-olds than 14-year-olds.

D) There are more 14-year-olds than 13-year-olds.

101. What is the value of the expression $5(b + 3)$ when $b = 7$?

A) 50

B) 38

C) 35

D) 15

102. A cycle factory makes bicycles and tricycles. Each day **b** bicycles and **t** tricycles are produced. The expression which shows the total number of bicycle and tricycle tires required each day is:

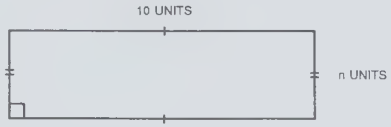
A) $2 + b + 3 + t$

B) $2t + 3b$

C) $2b + 3t$

D) $2 + t + 3 + b$

103. Examine the following rectangle.



The equation $2(n + 10) = 24$ tells that:

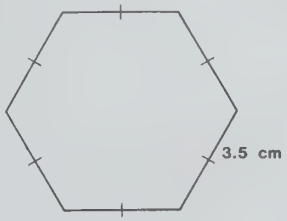
A) the area of the rectangle is 24 square units.

B) the length of the rectangle is 10 times its width.

C) twice the length of the rectangle is 24 units.

D) the perimeter of the rectangle is 24 units.

104. The length of each side of the figure below is 3.5 cm.



The perimeter of the figure is:

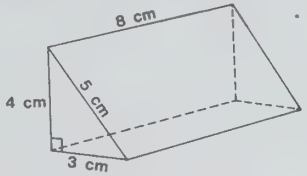
A) 17.5 cm

B) 21 cm

C) 175 cm

D) 210 cm

105. The dimensions of a triangular prism are shown in the diagram below.



What is the surface area of this triangular prism?

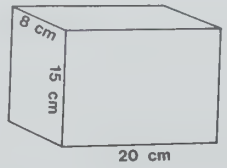
A) 120 cm^2

B) 108 cm^2

C) 96 cm^2

D) 76 cm^2

106. The dimensions of the box below are 8 cm × 15 cm × 20 cm.



What is the volume of the above box?

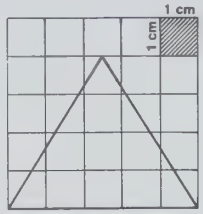
A) 43 cm^3

B) 300 cm^3

C) 1 160 cm^3

D) 2 400 cm^3

107. Each small square in the diagram below has an area of 1 cm^2.



What is the area of the triangle shown above?

A) 7 cm^2

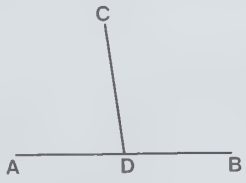
B) 10 cm^2

C) 15 cm^2

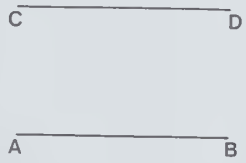
D) 20 cm^2

108. Which of the following figures shows CD perpendicular to AB?

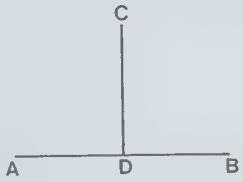
A)



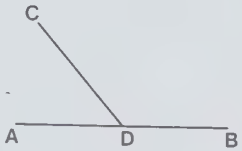
B)



C)



D)



109. Complete the construction of $\triangle ABC$ on the line segment below so that $\angle ABC = 90°$ and $AB = 5$ cm.

The length of AC in centimetres is between:

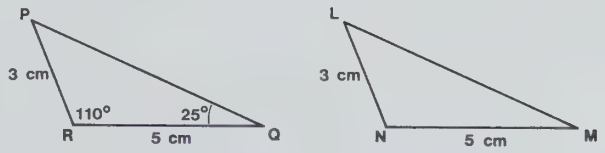
A) 7.1 and 7.7

B) 7.8 and 8.4

C) 8.5 and 9.1

D) 9.2 and 9.8

110. $\triangle$ LMN is congruent to $\triangle$ PQR.



$\angle$LNM must be equal to:

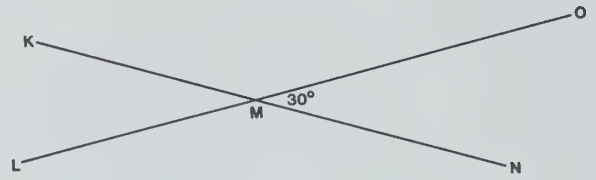
A) 25°

B) $\angle$PQR

C) $\angle$PRQ

D) 45°

111. The diagram below shows the intersection of two straight line segments.



What is the measure of $\angle$KML?

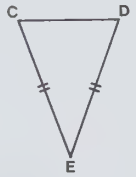
A) 30°

B) 80°

C) 150°

D) 180°

112. △CDE is an isosceles triangle.



Which angles have the same measure?

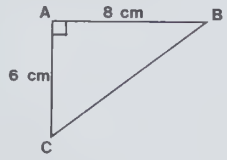
A) ∠C and ∠E

B) ∠D and ∠E

C) ∠C and ∠D

D) ∠C, ∠D and ∠E

113. The lengths of two sides are given for the triangle below.



The length of BC is:

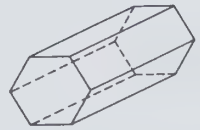
A) 7 cm

B) 10 cm

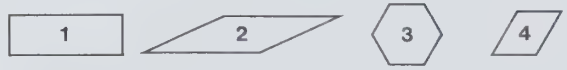
C) 14 cm

D) 100 cm

114. Study the prism below.



Which figures below can be drawn by tracing the faces of this prism?



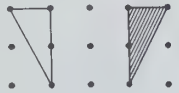
A) only 2 and 3

B) only 2 and 4

C) only 1 and 4

D) only 1 and 3

115. The diagram below shows a figure and its image.



Which of the following describes the above image?

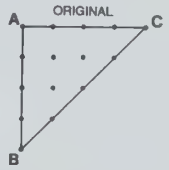
A) enlarged image

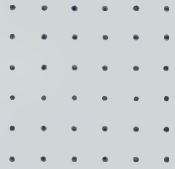
B) translated image

C) rotated image

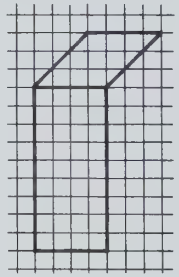
D) reflected image

116. Draw on the grid a reduction of triangle ABC. Use a scale factor of 0.5.





117. Complete the drawing of the rectangular prism below.



118. Write $\frac{2}{3}$ as a repeating decimal.

SHOW YOUR WORK

119. You have twelve coins totalling $1.65. If your coins are dimes and quarters, how many dimes do you have?

SHOW YOUR WORK

120. A soccer team earns 2 points for a win and 1 point for a tie. The team won twice as many games as it tied and lost no games. If the team scored a total of 15 points, how many games did it play?

STUDENT ASSESSMENT BOOKLET

MATHEMATICS

Grade 8 Mathematics

4

PROVINCIAL REVIEWS

Program Implementation & Review Branch
Ministry of Education

INSTRUCTIONS

1. Make sure your *Mathematics Student Answer Sheet* is turned to side 1 (title at top of page). Use an ***HB pencil*** to fill out your answer sheet.

   Be sure you have the following materials available:

   - eraser
   - ruler
   - protractor
   - compasses
   - paper (for folding or tracing)
   - transparent mirror (if available)

2. Fill in your **name**, the name of **your school board**, **your school**, and **your mathematics teacher** at the top of the *Mathematics Student Answer Sheet*. Also make sure you have filled in all the appropriate bubbles at the top of the sheet.

3. Do the sample question below. To record your answer, fill in the correct bubble under the word **EXAMPLE** on your answer sheet.

   EXAMPLE What year is this?

   A) 1989
   B) 1990
   C) 1991
   D) 1992

   You should have filled in bubble **B** on your answer sheet since this is 1990.

4. There are 40 questions in this **Student Assessment Booklet**. Some are multiple-choice and will be answered on the *Mathematics Student Answer Sheet*. Others are open-ended and will be answered directly in this booklet.

   You will be given all the time you need to complete the entire booklet.

5. Read each question in the booklet carefully. Next to each question number on your answer sheet, fill in the bubble that contains the letter corresponding to your response. Erase completely any responses you want to change.

6. On the front cover you will find a booklet number. On your answer sheet, find the box that corresponds to your booklet number. Be sure to record your answers in this box.

   If you have any questions about what you are supposed to do, ask your teacher.

121. Ronald bought the following items:

Box of computer disks	$ 8.50
Computer magazine	$ 8.98
Joystick	$ 39.75

The best estimate of the total value of Ronald's purchases, excluding sales tax, is:

A) $70.00

B) $50.00

C) $60.00

D) $40.00

122. Calculate 18 – 4.87.

A) 4.69

B) 13.13

C) 14.13

D) 14.23

123. Choose the correct answer: $73\overline{)4\ 088}$

A) 56

B) 58

C) 560

D) 580

124. The square of 5 is:

A) 55

B) 25

C) 10

D) 5

125. Which of the following is a prime number?

A) 99

B) 79

C) 69

D) 49

126. The expression 2 x 2 x 2 x 3 x 3 is equal to:

A) 6 + 9

B) 3 x 2 x 2 x 3

C) 12

D) $2^3 \times 3^2$

127. Calculate $4 - \frac{2}{3}$.

A) $4\frac{2}{3}$

B) $4\frac{1}{3}$

C) $3\frac{1}{3}$

D) $\frac{2}{3}$

128. Calculate $\frac{8}{3} \times \frac{4}{3}$.

A) $\frac{32}{3}$

B) $\frac{12}{3}$

C) $\frac{32}{9}$

D) $\frac{12}{6}$

129. The fraction equal to 0.05 is:

A) $\frac{1}{20}$

B) $\frac{1}{5}$

C) $\frac{5}{10}$

D) $\frac{1}{2}$

130. The ratio 16:12 in lowest terms is:

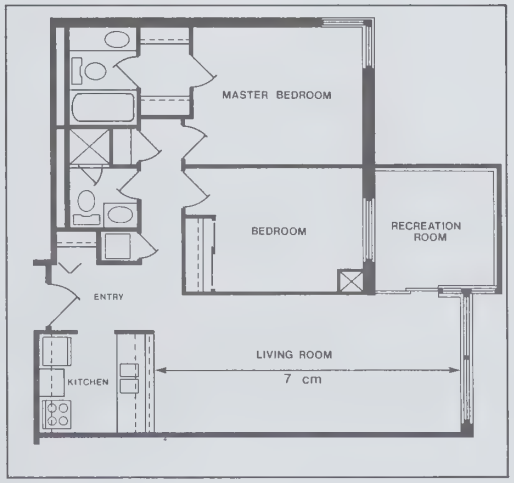
A) 4:3

B) 6:8

C) 8:6

D) 3:4

131. In the apartment pictured below, the actual length of the living-room is 7 m (700 cm). The length of the living room on the plan is 7 cm.



What is the scale used to draw the diagram?

A) 1:7

B) 1:10

C) 1:100

D) 1:700

132. For every 3 hamburgers sold in a restaurant, 2 hot dogs are sold. If 36 hamburgers were sold, how many hot dogs were sold?

A) 12

B) 18

C) 24

D) 54

133. Express 7 % as a decimal.

A) 0.07

B) 0.7

C) 7.0

D) 70.0

134. What percent is 0.005?

A) 0.005 %

B) 0.05 %

C) 0.5 %

D) 5.0 %

135. Julie received a discount of $40 on a skateboard. She paid $60 for the skateboard. What was the percentage discount?

A) 30 %

B) 40 %

C) 60 %

D) 67 %

136. Calculate (–13) + (–80).

A) +93

B) +67

C) –67

D) –93

137. On December 15, the temperature inside a science lab was 21°C. The temperature outside was –6°C. How many degrees warmer was it inside the lab than outside?

A) –27

B) –15

C) 15

D) 27

138. On the following number line, which letter represents the integer +3?

A) W

B) X

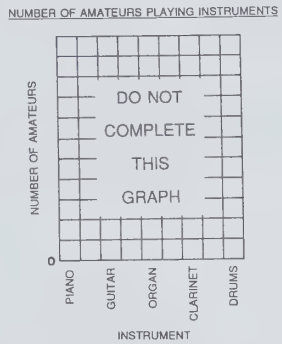
C) Y

D) Z

139. A list of the five most popular musical instruments played by amateurs is given below.

INSTRUMENT	NUMBER OF AMATEURS
PIANO	18 000 000
GUITAR	15 000 000
ORGAN	6 000 000
CLARINET	3 000 000
DRUMS	2 000 000

This data could be plotted on the grid below to make a bar graph.



What is an appropriate scale for the above graph?

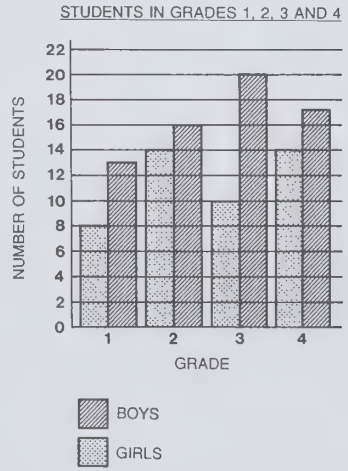
A) 1 unit represents 1 000 000 amateurs

B) 1 unit represents 10 000 000 amateurs

C) 1 unit represents 2 000 000 amateurs

D) 1 unit represents 500 000 amateurs

140. The graph below shows the number of boys and girls in each grade.



Which of these is a TRUE statement about the information shown on the graph?

A) Grade 2 has the fewest number of students.

B) Grade 2 and 4 have the same number of students.

C) Grade 4 has more girls than boys.

D) Grade 3 has twice as many boys as girls.

141. Asim receives an allowance of $12 a week. He saves $4 of it for clothing. To represent this savings on a circle graph, the number of degrees needed would be:

A) 240

B) 120

C) 90

D) 30

142. What is the value of $a^2 + b^3$ if a = 3 and b = 2?

A) 12

B) 13

C) 15

D) 17

143. A worker earns $400 per week plus $15 for each hour of overtime. If she worked **n** hours of overtime, which expression represents her weekly wages?

A) 400 + 15n

B) 400 + n

C) 400n + 15

D) 400 + 15 + n

144. What is the value of p in $\frac{p}{2} + 5 = 9$?

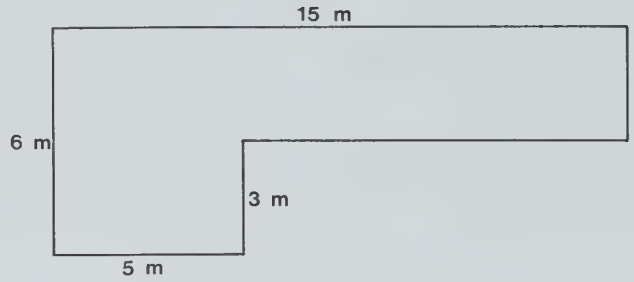
A) 4

B) 7

C) 8

D) 14

145. Here is the plan of a garden.



The area of the garden in square metres is:

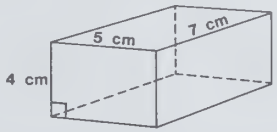
A) 90

B) 60

C) 45

D) 30

146. The dimensions of the box shown below are 4 cm × 5 cm × 7 cm.



If there is no overlap, what is the least amount of paper needed to cover this box?

A) 180 cm^2

B) 166 cm^2

C) 152 cm^2

D) 140 cm^2

147. What is the volume of a hexagonal shaped pencil which has an end (base) with an area of 48 mm^2 and a length of 200 mm?

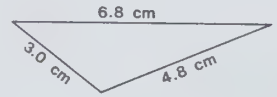
A) 148 mm^3

B) 248 mm^3

C) 496 mm^3

D) 9 600 mm^3

148. The dimensions of a triangle are given below.



What is the perimeter of this triangle?

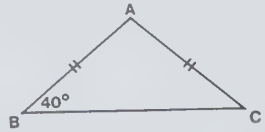
A) 14.6 cm

B) 7.8 cm

C) 7.3 cm

D) 13 cm

149. Triangle ABC is an isosceles triangle. The measure of ∠B is given.



What is the measure of ∠A?

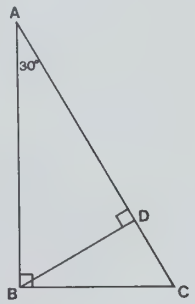
A) 60°

B) 90°

C) 100°

D) 140°

150. The measure of ∠A is given in the diagram below.



What is the measure of angle ∠DBC?

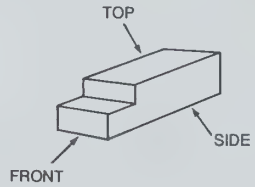
A) 30°

B) 45°

C) 60°

D) 90°

151. The diagram below shows an object with the top, front, and side labelled.



Which of the following views of the above object is the front view?

A)

B)

C)

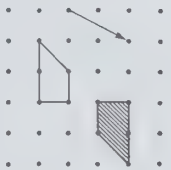
D)

152. Which picture below shows the image of a quadrilateral under a given translation shown by the arrow?

A)

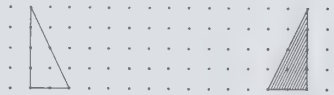
B)

C)



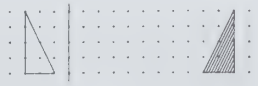
D)

153. The diagram below shows a figure and its reflected image.



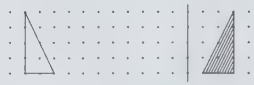
Which diagram below shows the reflection line for the figure and its image?

A)



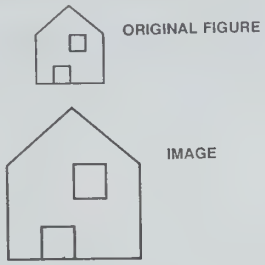
B)

C)



D)

154. The diagram below shows an original figure and its image.



The angles of the image corresponding to the angles of the original figure are:

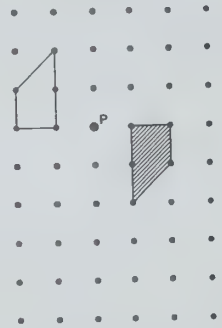
A) greater than those in the original.

B) twice as large as those in the original.

C) less than those in the original.

D) equal to those in the original.

155. The diagram illustrates a figure and its image.



Which of the following describes the image?

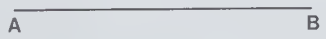
A) rotation image

B) mirror image

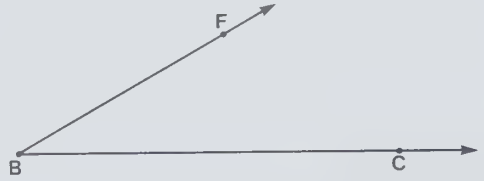
C) reflection image

D) translation image

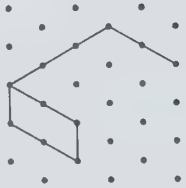
156. Construct the perpendicular bisector of line segment AB.



157. Complete the construction of $\triangle$ ABC below, making AC = 6 cm.
Point **A** must be between points **B** and **F**.



158. Complete the drawing of the rectangular prism below.



SHOW YOUR WORK

159. During the summer, Nina collected white and pink shells on the beach. One day she collected 2 white shells and 1 pink shell. On the next day, she collected 4 white shells and 4 pink shells, and on the third day she found 6 white shells and 7 pink shells. If this pattern continued, on what day did she collect 6 more pink shells than white shells?

SHOW YOUR WORK

160. Tin Jee collects hockey cards. When they are stacked in equal piles of 2 or equal piles of 3, there is 1 left over. However, with piles of 5, there are none left over. If she has fewer than 50 hockey cards, how many cards does she have?

STUDENT ASSESSMENT BOOKLET

MATHEMATICS

Grade 8 Mathematics

5

PROVINCIAL REVIEWS

Program Implementation & Review Branch
Ministry of Education

INSTRUCTIONS

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   EXAMPLE What year is this?

   A) 1989
   B) 1990
   C) 1991
   D) 1992

   You should have filled in bubble **B** on your answer sheet since this is 1990.

4. There are 40 multiple-choice questions in this **Student Assessment Booklet**. Record your answers to these questions on the *Mathematics Student Answer Sheet.*

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5. Read each question in the booklet carefully. Next to each question number on your answer sheet, fill in the bubble that contains the letter corresponding to your response. Erase completely any responses you want to change.

6. This is Booklet 5. On the back of your answer sheet, you will find the box for Booklet 5. Be sure to record your answers in this box.

   If you have any questions about what you are supposed to do, ask your teacher.

161. The expression 0.40×6.38 is equal to:

A) 0.2552

B) 2.452

C) 2.552

D) 24.52

E) 25.52

162. The number $7\frac{3}{20}$ is equal to:

A) 7.03

B) 7.15

C) 7.23

D) 7.3

E) 7.6

163. The fraction $\frac{1}{5}$ is equal to:

A) 0.20 %

B) 2 %

C) 5 %

D) 20 %

E) 25 %

164. The value of $2^3 \times 3^2$ is:

A) 30

B) 36

C) 64

D) 72

E) None of these

165. 20 % of 125 is equal to:

A) 6.25

B) 12.50

C) 15

D) 25

E) 50

166. Which of the following is a pair of equivalent fractions?

A) $\frac{3}{5}$ and $\frac{9}{15}$

B) $\frac{5}{6}$ and $\frac{2}{3}$

C) $\frac{4}{5}$ and $\frac{14}{15}$

D) $\frac{5}{8}$ and $\frac{2}{3}$

E) $\frac{1}{2}$ and $\frac{14}{24}$

167. The picture shows some black and some white marbles.

What fraction of the marbles is white?

A) $\frac{4}{10}$

B) $\frac{6}{10}$

C) $\frac{4}{6}$

D) $\frac{6}{4}$

E) $\frac{1}{2}$

168. Joe had three test scores of 78, 76, and 74, while Mary had scores of 72, 82, and 74. How did Joe's average compare with Mary's?

A) Joe's average was 1 point higher.

B) Joe's average was 1 point lower.

C) Both averages were the same.

D) Joe's average was 2 points higher.

E) Joe's average was 2 points lower.

169. Candidate **A** received 70 percent of the votes cast in an election. If 4 200 votes were cast in the election, how many votes did Candidate **A** receive?

A) 2 800

B) 2 900

C) 2 940

D) 3 000

E) 4 130

170. A painter is to mix green and yellow paint in the ratio of 4 to 7 to obtain the colour he wants. If he has 28 L of green paint, how many litres of yellow paint should be added?

A) 196 L

B) 49 L

C) 28 L

D) 16 L

E) 11 L

171. When $x = 2$, $\frac{7x + 4}{5x - 4}$ is equal to:

A) 11

B) 3

C) $\frac{11}{6}$

D) $\frac{9}{5}$

E) $\frac{7}{5}$

172. A number x is multiplied by itself and the result is added to four times the original number. This can be expressed as:

A) $x^2 = 4$

B) $x + 4$

C) $2x + 4$

D) $x(x^2 + 4)$

E) $x^2 + 4x$

173. $A = XY$. If $A = 12$ and $X = 3$, then Y is equal to:

A) $\frac{3}{4}$

B) 3

C) 4

D) 12

E) 36

174. A 15 cm piece is cut from a ribbon one metre long. What is the length of the remaining piece?

A) 85 cm

B) 115 cm

C) 985 cm

D) 1 015 cm

E) 9 985 cm

175. When using the metric system, the distance between two towns is usually measured in:

A) millimetres

B) centimetres

C) decimetres

D) metres

E) kilometres

176. A solid plastic cube with edges one centimetre long has a mass of one gram. What will be the mass of a solid cube of the same plastic if each edge is 2 cm long?

A) 8 g

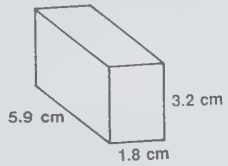
B) 4 g

C) 3 g

D) 2 g

E) 1 g

177. The figure below shows a rectangular box.



Which of the following is closest to the volume of this box?

A) 48 cm^3

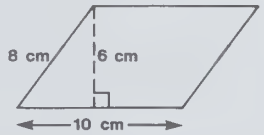
B) 36 cm^3

C) 28 cm^3

D) 18 cm^3

E) 16 cm^3

178. The figure below is a parallelogram.



What is the area of the above parallelogram?

A) 80 cm^2

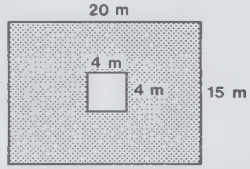
B) 60 cm^2

C) 48 cm^2

D) 36 cm^2

E) 30 cm^2

179. A square is removed from the rectangle as shown below.



What is the area of the remaining part?

A) 316 m^2

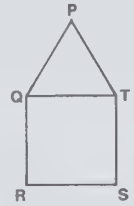
B) 300 m^2

C) 284 m^2

D) 80 m^2

E) 16 m^2

180. The figure QRST is a square and PQT is an equilateral triangle.



If PQ = 6 cm, then the area of the square is:

A) 64 cm^2

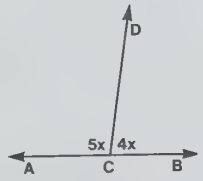
B) 48 cm^2

C) 40 cm^2

D) 36 cm^2

E) 24 cm^2

181. AB is a straight line.



What is the measure in degrees of angle BCD?

A) 20

B) 40

C) 50

D) 80

E) 100

182. Which one of the indicated angles is ACUTE?

A)

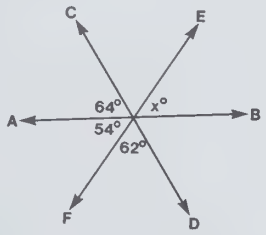
B)

C)

D)

E)

183. AB, CD, and EF are intersecting straight lines as shown above. The measures of certain angles are shown.



x° is equal to:

A) 54

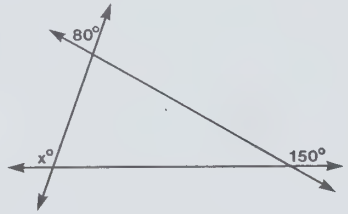
B) 62

C) 64

D) 126

E) 128

184. Three straight lines intersect as shown in the diagram.



x° is equal to:

A) 30

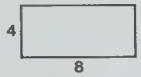
B) 50

C) 60

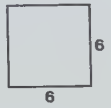
D) 110

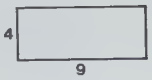
E) 150

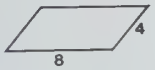
185. Look at the following figure.

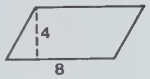


One of the following figures is congruent to the figure above. Which one?

A)


B)


C)


D)


E)

186. All parallellograms must have:

A) one pair of adjacent sides equal.

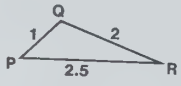
B) one pair of parallel sides.

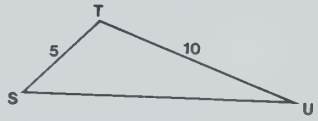
C) a diagonal as axis of symmetry.

D) two adjacent angles equal.

E) two pairs of parallel sides.

187. Triangles PQR and STU are similar.





How long is SU?

A) 5

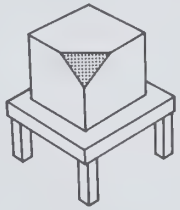
B) 10

C) 12.5

D) 15

E) 25

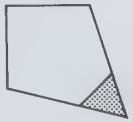
188. This figure below shows a wooden cube with one corner cut off and shaded.



Which of the following drawings shows how this cube would look when viewed from directly above it?

A)

B)

C) 

D)

E)

189. A model boat is built to scale so that it is $\frac{1}{10}$ as long as the original boat. If the width of the original boat is 4 m, the width of the model should be:

A) 0.1 m

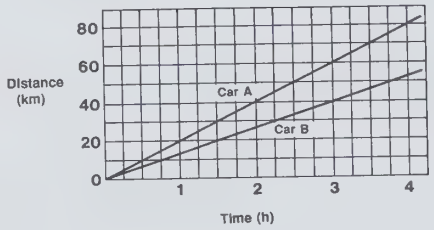
B) 0.4 m

C) 1 m

D) 4 m

E) 40 m

190. Look at the graph below.



Three hours after starting, Car **A** is how many kilometres ahead of Car **B**?

A) 2

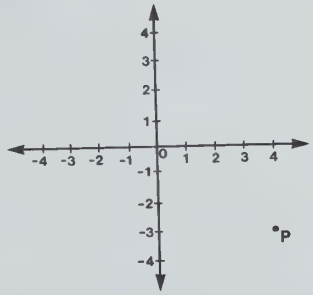
B) 10

C) 15

D) 20

E) 25

191. Point **P** is shown below.



What are the coordinates of point **P**?

A) (4,–3)

B) (–4,–3)

C) (3,4)

D) (–3,4)

E) (–4,3)

192. Look at the figure below.

The position on the scale indicated by the arrow is:

A) 1.004

B) 1.04

C) 1.08

D) 1.4

E) 1.8

193. The air temperature at the foot of a mountain is 31°C. On top of the mountain the temperature is –7°C. How much warmer is the air at the foot of the mountain?

A) –38°

B) –24°

C) 7°

D) 24°

E) 38°

194. On a number line, two points **A** and **B** are given. The coordinate of **A** is –3 and the coordinate of **B** is +7. What is the coordinate of the point **C**, if **B** is the midpoint of the line segment AC?

A) –13

B) $-\frac{1}{2}$

C) +2

D) +12

E) +17

195. The circle graph shows the proportion of various grain crops produced by a country.

Which of the following is TRUE?

A) More oats than rye is produced.

B) The largest crop is barley.

C) Equal quantities of wheat and barley are produced.

D) The smallest crop is oats.

E) Wheat and oats together make up less than half the total grain crop.

196. The table below compares the height from which a ball is dropped (d) and the height to which it bounces (b).

d	50	80	100	150
b	25	40	50	75

Which formula describes this relationship?

A) $b = d^2$

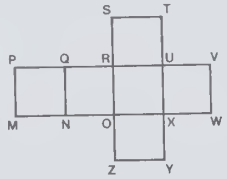
B) $b = 2d$

C) $b = \frac{d}{2}$

D) $b = d + 25$

E) $b = d - 25$

197. The diagram shows a cardboard cube which has been cut along some edges and folded out flat.



If it is folded again to make the cube, which two corners will touch corner **P**?

A) corners **T** and **V**

B) corners **T** and **Y**

C) corners **W** and **Y**

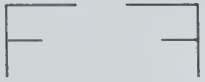
D) corners **Q** and **S**

E) corners **U** and **Y**

198. In which diagram below is the second figure the image of the first figure under a reflection (flip) line?

A)

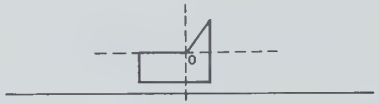
B)

C) 

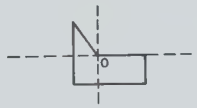
D)

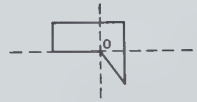
E)

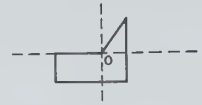
199. A half-turn (180°) about point **O** is applied to the figure below.

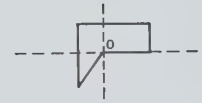


Which of the figures below is the result?

A) 

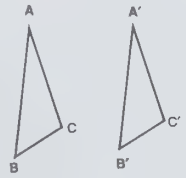
B) 

C) 

D) 

E)

200. △ ABC and △ A′B′C′ are congruent and their corresponding sides are parallel.



△ ABC maps onto △ A′B′C′ by:

A) a reflection

B) a glide reflection (slide flip)

C) a rotation (turn)

D) an enlargement

E) a translation (slide)

SCORING GUIDE: STUDENT ASSESSMENT BOOKLETS

GRADE 8 MATHEMATICS

PROVINCIAL REVIEWS

MATHEMATICS

Ministry of Education
Program Implementation and
Review Branch

TABLE OF CONTENTS

	Page
Directions	1
Scoring Guide - Student Assessment Booklet 1	5
Scoring Guide - Student Assessment Booklet 2.	16
Scoring Guide - Student Assessment Booklet 3	28
Scoring Guide - Student Assessment Booklet 4	37

Note: *Student Assessment Booklet 5 has no open-ended questions to be scored.*

DIRECTIONS

A. GENERAL INSTRUCTIONS

Four of the five Student Assessment Booklets each contain:

- 3 open-ended problems that are scored correct or incorrect, and
- 2 process problems that follow a more complex scoring procedure.

The fifth Student Assessment Booklet consists only of multiple-choice questions and does not require teacher marking.

Record your assessment in the area called "For Teacher's Use Only" on the back of each student's answer sheet. Be sure to record your score in the box corresponding to the booklet number the student completed. Fill in the circle next to each question number that corresponds to your assessment of the student's response.

Use an HB pencil.

B. OPEN-ENDED PROBLEMS SCORED CORRECT OR INCORRECT

In your assessment of each student's solution to these problems, indicate whether or not the student provided a correct solution, or whether the student did not attempt the question at all.

A	Did not attempt the question
B	Correct solution
C	Incorrect solution

Transparency overlays are enclosed with this guide for your use in scoring problems requiring the student to complete or draw a diagram.

Use your professional judgement in determining the correctness of a student's drawing that does not exactly match the art in the scoring guide or on the overlay.

C. PROCESS PROBLEMS

In your assessment of each student's solution to each problem, you are required to make two judgements:

- Has the student provided a satisfactory solution?
- What strategy did the student use to arrive at the solution?

1. Response

Record your judgement on the quality of the solution in the row labelled **Response** for the appropriate problem number on the *Mathematics Student Answer Sheet*. For all problems, the alternatives are **A** through **G** as specified in the scoring key for each problem.

A	Alternative **A** is used to indicate no response.
B, C, D	Alternatives **B**, **C**, and **D** indicate that the student gave the correct answer: **B** - correct answer, complete solution **C** - correct answer, incomplete solution **D** - correct answer, no strategy It may be difficult to distinguish between **B** and **C** for some solutions. Only use **C** when it is very obvious that the student omitted a key component of the solution. Alternative **D** can also be used for the situation where the student gives the correct answer and makes a few notes that are not related to a solution strategy.

E, F

Alternatives **E** and **F** indicate that the students did not give a correct answer:

E - no correct answer, reasonable strategy, minor error

F - no correct answer, reasonable strategy, major error

It may be difficult to distinguish between **E** and **F** for some solutions. For **E**, it should be obvious that the student would have obtained the correct answer if the minor error had not been made. Record **F**, if the student started a reasonable solution but did not complete it, or made some major error in reasoning part way through the solution.

G

G - no correct answer, no understanding

Use **G** if an incorrect answer is given with no work shown, or if the work shown does not show any understanding of the problem.

Mark only <u>one</u> option for a given problem.

2. Strategy

The alternatives for the descriptions of the strategies are different for each question. Please choose the <u>one</u> strategy which most closely matches the students' work and record it in the row labelled **strategy** for the appropriate problem on the *Mathematics Student Answer Sheet.*

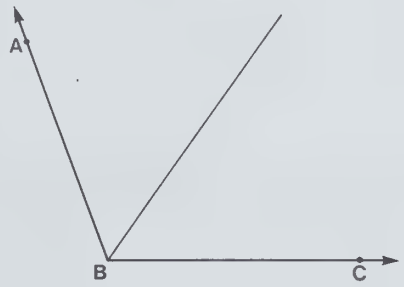
<u>Notes:</u>

These comments are presented to assist you in scoring the process problems. Please note that the student is encouraged to show the work in order that you can assess, as accurately as possible, the strategy used. In some instances you will have to use good professional judgement in evaluating the student's work.

- *Although a concluding statement to the solution of a problem is desirable, it is <u>not required</u> for this assessment.*
- *The diagram, charts, tables, lists, or other methods of solving a problem need not be exactly as shown.*

STUDENT ASSESSMENT BOOKLET 1

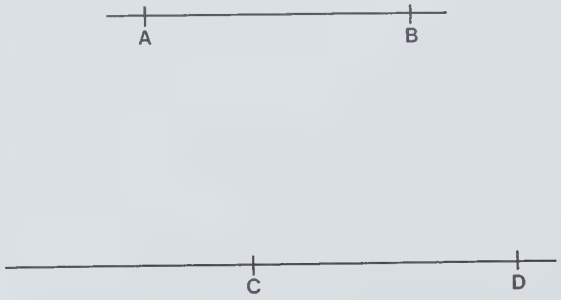
36. Bisect $\angle ABC$.



NOTE: *If students draw construction lines (arcs) showing that they have followed the correct procedure, mark it correct even if the position of the line is not exact.*

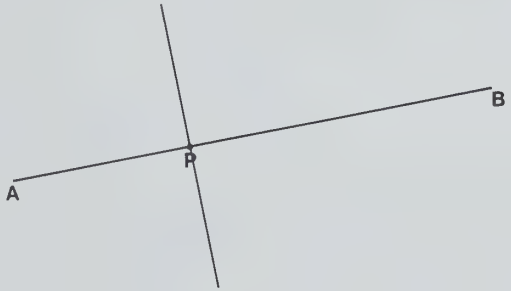
A = Did not attempt the question
B = Correct solution
C = Incorrect solution

37. On the given line, construct a line segment CD congruent to line segment AB.



A = Did not attempt the question
B = Correct solution
C = Incorrect solution

38. Construct a line through **P** perpendicular to AB



NOTE: Perpendicular does not need to be labelled or marked as being perpendicular. Line that is perpendicular and stops at P is acceptable.

If students draw construction lines (arcs) showing that they have followed the correct procedure, mark it correct even if the position of the line is not exact.

A	= Did not attempt the question
B	= Correct solution
C	= Incorrect solution

39. Peter and Juanita decided to start saving money. Peter can save 3 dollars each month and Juanita can save 5 dollars each month. At this rate, after how many months will Juanita have exactly 10 dollars more than Peter?

Correct Response: 5 months

1. Response

Record your judgement on the quality of the solution in the row labelled **Response** for the appropriate problem number on the *Mathematics Student Answer Sheet*. The alternatives are **A** through **G** as specified below:

A. Did not attempt the question.

B. Completes the solution correctly using an appropriate strategy.

C. Gives the correct answer, starts an appropriate strategy, but does not complete it.

D. Gives the correct answer, but does not show reasoning/strategy.

E. Selects an appropriate strategy, but does not get correct answer due to a minor (e.g., computational) error.

F. Selects an appropriate strategy and shows understanding, but does not complete the solution or makes a major error in reasoning.

G. Attempted the question but does not show understanding that would lead to a solution.

Mark only <u>one</u> option for a given problem.

2. Strategy

Please choose the one strategy which most closely matches the students' work and record it in the row labelled **strategy** for the appropriate problem on the *Mathematics Student Answer Sheet.*

A. Did not attempt the question or attempted the question but did not show understanding that would lead to a solution.

B. Answer only, right or wrong, no work shown

C. Organized table

Month	Juanita	Peter	Difference
1	5	3	2
2	10	6	4
3	15	9	6
4	20	12	8
5	25	15	10

5 months - correct response

D. Arithmetic/Algebraic

Example 1: \$5 – \$3 = \$2 per month

$\therefore \frac{10}{2} = 5$ months

Example 2: x represents the number of months

$5x - 3x = 10$

$2x = 10$

$x = 5$ months

E. Diagram

Month 1	Month 2	Month 3	Month 4	Month 5
2	4	6	8	10

$\therefore$ 5 months

S. Other strategy shown

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40. Four students came to a meeting. If each one shook hands with everyone else once, how many handshakes would there be altogether?

Correct Response: 6

1. Response

Record your judgement on the quality of the solution in the row labelled **Response** for the appropriate problem number on the *Mathematics Student Answer Sheet.* The alternatives are **A** through **G** as specified below:

A. Did not attempt the question.

B. Completes the solution correctly using an appropriate strategy.

C. Gives the correct answer, starts an appropriate strategy, but does not complete it.

D. Gives the correct answer, but does not show reasoning/strategy.

E. Selects an appropriate strategy, but does not get correct answer due to a minor (e.g., computational) error.

F. Selects an appropriate strategy and shows understanding, but does not complete the solution or makes a major error in reasoning.

G. Attempted the question but does not show understanding that would lead to a solution.

Mark only <u>one</u> option for a given problem.

2. Strategy

Please choose the one strategy which most closely matches the students' work and record it in the row labelled **strategy** for the appropriate problem on the *Mathematics Student Answer Sheet.*

A. Did not attempt the question or attempted the question but did not show understanding that would lead to a solution.

B. Answer only, right or wrong, no work shown

C. List, chart or table that accounts for all possibilities

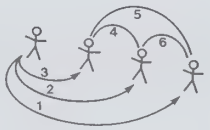
A-B A-C A-D

B-C B-D

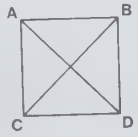
C-D

	A	B	C	D
A		✓	✓	✓
B			✓	✓
C				✓
D				

D. Diagram that accounts for all possibilities



6 handshakes



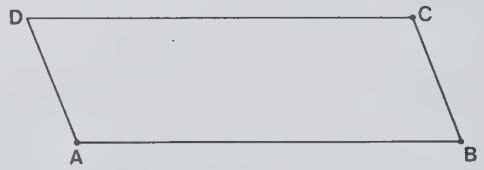
E. Organized list

Person	Handshakes
1	0
2	1
3	3
4	6

S. Some other strategy shown

STUDENT ASSESSMENT BOOKLET 2

76. Complete the construction of parallelogram ABCD.

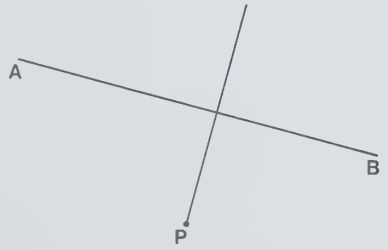


NOTE: Do not count as incorrect if not labelled.

If students draw construction lines (arcs) showing that they have followed the correct procedure, mark it correct even if the position of the line is not exact.

A	= Did not attempt the question
B	= Correct solution
C	= Incorrect solution

77. Construct a line through **P** perpendicular to AB.



NOTE: *Perpendicular need not be labelled or marked and can extend beyond **P** or just to the line.*

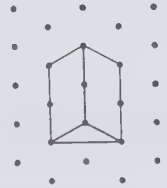
If students draw construction lines (arcs) showing that they have followed the correct procedure, mark it correct even if the position of the line is not exact.

A = Did not attempt the question

B = Correct solution

C = Incorrect solution

78. Complete the diagram below to show a triangular prism.



NOTE: *Students are not required to show dotted lines to represent edges that are hidden. If students include these dotted lines, ignore them; if a student puts them in and they are wrong, do not mark the answer incorrect because of it.*

A = Did not attempt the question

B = Correct solution

C = Incorrect solution

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79. Toothpicks are arranged as follows:

FIGURE 1 FIGURE 2 FIGURE 3

If the pattern is continued, how many toothpicks are used in making the 10th figure?

Correct Response: 33

If student draws a complete picture showing 10 boxes but does not specify 33 toothpicks, mark alternative **B**.

1. Response

Record your judgement on the quality of the solution in the row labelled **Response** for the appropriate problem number on the *Mathematics Student Answer Sheet*. The alternatives are **A** through **G** as specified below:

A. Did not attempt the question.

B. Completes the solution correctly using an appropriate strategy.

C. Gives the correct answer, starts an appropriate strategy, but does not complete it.

D. Gives the correct answer, but does not show reasoning/strategy.

E. Selects an appropriate strategy, but does not get correct answer due to a minor (e.g., computational) error.

F. Selects an appropriate strategy and shows understanding, but does not complete the solution or makes a major error in reasoning.

G. Attempted the question but does not show understanding that would lead to a solution.

Mark only <u>one</u> option for a given problem.

2. Strategy

Please choose the one strategy which most closely matches the students' work and record it in the row labelled **strategy** for the appropriate problem on the *Mathematics Student Answer Sheet*.

A. Did not attempt the question or attempted the question but did not show understanding that would lead to a solution.

B. Answer only, right or wrong, no work shown

C. Organized table

Example 1:

Figure #	# Toothpicks
1	6
2	9
3	12
4	15
5	18
6	21
7	24
8	27
9	30
10	33

Example 2:

6
6 + 3
6 + 3 + 3
6 + 3 + 3 + 3

D. Diagram

The completion of the remaining 7 diagrams in the pattern.

OR

The completion of the 7th diagram in the pattern. (10 squares and the triangle)

E. Algebraic solution

x represents the figure number

or

x represents the number of squares in the figure

$(x + 1) \times 3$ = number of toothpicks
$(10 + 1) \times 3 = 33$

S. Some other strategy shown

(blank page in original)

80. John counted the legs of dogs and children at a dog show in the park. There were a total of 80 legs. If the difference between the number of children and the number of dogs was 1, how many dogs and children were there at the dog show?

Correct Response: 13 dogs and 14 children

1. Response

Record your judgement on the quality of the solution in the row labelled **Response** for the appropriate problem number on the *Mathematics Student Answer Sheet*. The alternatives are **A** through **G** as specified below:

A. Did not attempt the question.

B. Completes the solution correctly using an appropriate strategy.

C. Gives the correct answer, starts an appropriate strategy, but does not complete it.

D. Gives the correct answer, but does not show reasoning/strategy.

E. Selects an appropriate strategy, but does not get correct answer due to a minor (e.g., computational) error.

F. Selects an appropriate strategy and shows understanding, but does not complete the solution or makes a major error in reasoning.

G. Attempted the question but does not show understanding that would lead to a solution.

Mark only <u>one</u> option for a given problem.

2. Strategy

Please choose the one strategy which most closely matches the students' work and record it in the row labelled **strategy** for the appropriate problem on the *Mathematics Student Answer Sheet*.

A. Did not attempt the question or attempted the question but did not show understanding that would lead to a solution.

B. Answer only, right or wrong, no work shown

C. Guess and check with substitution

8 dogs and 9 children	difference 1	(32 + 18 = 50 legs)
10 dogs and 11 children	difference 1	(40 + 22 = 62 legs)
12 dogs and 13 children	difference 1	(48 + 26 = 74 legs)
13 dogs and 14 children	difference 1	(52 + 28 = 80 legs)

D. Organized list, chart or table

Children	Dogs	Difference	Number of Legs
40	0	40	80
38	1	37	80
36	2	34	80
20	10	10	80
14	13	1	80 (correct response)

E. Algebraic Solution or Numerical Calculation

(i) x = number of dogs (assume more dogs)

$$4x + 2(x - 1) = 80$$
$$6x = 81$$
$$x = 13.5 \text{ (wrong)}$$

x = number of children (assume more children)

$$2x + 4(x - 1) = 80$$
$$6x = 84$$
$$x = 14$$

14 children (correct)
13 dogs

(ii) On average there are 3 legs

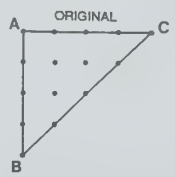
$\frac{80}{3}$ = 26 and 2 left over

There are at least 13 dogs and 13 children. The two legs left over would be for one more child, so there are 13 dogs and 14 children.

S. Some other strategy shown

STUDENT ASSESSMENT BOOKLET 3

116. Draw on the grid a reduction of triangle ABC. Use a scale factor of 0.5.



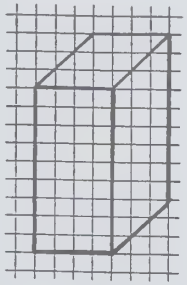
NOTE: Reduction does not have to be labelled. Can be in any orientation.

A = Did not attempt the question

B = Correct solution

C = Incorrect solution

117. Complete the drawing of the rectangular prism below.



NOTE: Students are not required to show dotted lines to represent edges that are hidden. If students include these dotted lines, ignore them; if a student puts them in and they are wrong, do not mark the answer incorrect because of it.

A	= Did not attempt the question
B	= Correct solution
C	= Incorrect solution

118. Write $\frac{2}{3}$ as a repeating decimal.

$0.\dot{6}$ OR $0.\hat{6}$ OR $0.66\bar{6}$ OR $0.66\hat{6}$

NOTE: Zero need not be placed in the answer.

A	= Did not attempt the question
B	= Correct solution
C	= Incorrect solution

(blank page in original)

119. You have twelve coins totalling $1.65. If your coins are dimes and quarters, how many dimes do you have?

Correct Response: 9

1. Response

Record your judgement on the quality of the solution in the row labelled **Response** for the appropriate problem number on the *Mathematics Student Answer Sheet*. The alternatives are **A** through **G** as specified below:

A. Did not attempt the question.

B. Completes the solution correctly using an appropriate strategy.

C. Gives the correct answer, starts an appropriate strategy, but does not complete it.

D. Gives the correct answer, but does not show reasoning/strategy.

E. Selects an appropriate strategy, but does not get correct answer due to a minor (e.g., computational) error.

F. Selects an appropriate strategy and shows understanding, but does not complete the solution or makes a major error in reasoning.

G. Attempted the question but does not show understanding that would lead to a solution.

Mark only <u>one</u> option for a given problem.

2. Strategy

Please choose the one strategy which most closely matches the students' work and record it in the row labelled **strategy** for the appropriate problem on the *Mathematics Student Answer Sheet.*

A. Did not attempt the question or attempted the question but did not show understanding that would lead to a solution.

B. Answer only, right or wrong, no work shown

C. Organized list

1 quarter	11 dimes ($1.35)
2 quarters	10 dimes ($1.50)
3 quarters	9 dimes ($1.65, correct response)

D. Diagram or pictures

E. Guess and check/trial and error

5 dimes	7 quarters ($2.25)
8 dimes	4 quarters ($1.80)
10 dimes	2 quarters ($1.50)
9 dimes	3 quarters ($1.65, correct response)

S. Some other strategy shown

120. A soccer team earns 2 points for a win and 1 point for a tie. The team won twice as many games as it tied and lost no games. If the team scored a total of 15 points, how many games did it play?

Correct Response: 9

1. Response

Record your judgement on the quality of the solution in the row labelled **Response** for the appropriate problem number on the *Mathematics Student Answer Sheet.* The alternatives are **A** through **G** as specified below:

A. Did not attempt the question.

B. Completes the solution correctly using an appropriate strategy.

C. Gives the correct answer, starts an appropriate strategy, but does not complete it.

D. Gives the correct answer, but does not show reasoning/strategy.

E. Selects an appropriate strategy, but does not get correct answer due to a minor (e.g., computational) error.

F. Selects an appropriate strategy and shows understanding, but does not complete the solution or makes a major error in reasoning.

G. Attempted the question but does not show understanding that would lead to a solution.

Mark only one option for a given problem.

2. Strategy

Please choose the one strategy which most closely matches the students' work and record it in the row labelled **strategy** for the appropriate problem on the *Mathematics Student Answer Sheet.*

A. Did not attempt the question or attempted the question but did not show understanding that would lead to a solution.

B. Answer only, right or wrong, no work shown

C. Organized list, chart, or table

Won	Tied	Points
2	1	5
4	2	10
6	3	15 (correct response)
8	4	20

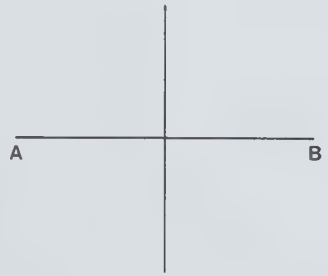
D. Guess and Check

10 wins	5 ties	(25 points)
5 wins	2.5ties	(doesn't work)
4 wins	2 ties	(10 points)
6 wins	3 ties	(15 points, correct response)

S. Some other strategy shown

STUDENT ASSESSMENT BOOKLET 4

156. Construct the perpendicular bisector of line segment AB.



NOTE: The perpendicular bisector need not be labelled or marked.

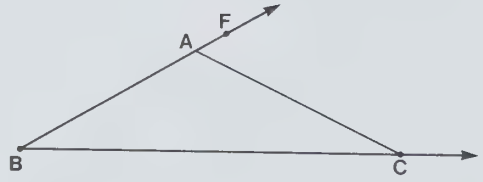
If students draw construction lines (arcs) showing that they have followed the correct procedure, mark it correct even if the position of the line is not exact.

A = Did not attempt the question

B = Correct solution

C = Incorrect solution

157. Complete the construction of Δ ABC below, making AC = 6 cm.
Point **A** must be between points **B** and **F**.

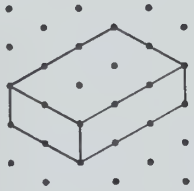


A = Did not attempt the question

B = Correct solution

C = Incorrect solution

158. Complete the drawing of the rectangular prism below.



NOTE: Students are not required to show dotted lines to represent edges that are hidden. If students include these dotted lines, ignore them; if a student puts them in and they are wrong, do not mark the answer incorrect because of it.

A = Did not attempt the question

B = Correct solution

C = Incorrect solution

159. During the summer, Nina collected white and pink shells on the beach. One day she collected 2 white shells and 1 pink shell. On the next day, she collected 4 white shells and 4 pink shells, and on the third day she found 6 white shells and 7 pink shells. If this pattern continued, on what day did she have 6 more pink shells than white shells?

Correct Response: Day 8

1. Response

Record your judgement on the quality of the solution in the row labelled **Response** for the appropriate problem number on the *Mathematics Student Answer Sheet.* The alternatives are **A** through **G** as specified below:

A. Did not attempt the question.

B. Completes the solution correctly using an appropriate strategy.

C. Gives the correct answer, starts an appropriate strategy, but does not complete it.

D. Gives the correct answer, but does not show reasoning/strategy.

E. Selects an appropriate strategy, but does not get correct answer due to a minor (e.g., computational) error.

F. Selects an appropriate strategy and shows understanding, but does not complete the solution or makes a major error in reasoning.

G. Attempted the question but does not show understanding that would lead to a solution.

Mark only <u>one</u> option for a given problem.

2. Strategy

Please choose the one strategy which most closely matches the students' work and record it in the row labelled **strategy** for the appropriate problem on the *Mathematics Student Answer Sheet.*

A. Did not attempt the question or attempted the question but did not show understanding that would lead to a solution.

B. Answer only, right or wrong, no work shown

C. Organized list, chart, or table used to search for a pattern

1.

Day	White	Pink	Difference
1	2	1	1
2	4	4	0
3	6	7	1
4	8	10	2
5	10	13	3
6	12	16	4
7	14	19	5
8	16	22	6

2.

Day	1	2	3	4	5	6	7	8
White Shells	2	4	6	8	10	12	14	16
Pink Shells	1	4	7	10	13	16	19	22

D. Diagram or pictures

S. Some other strategy shown

160. Tin Jee collects hockey cards. When they are stacked in equal piles of 2 or equal piles of 3, there is 1 left over. However, with piles of 5, there are none left over. If he has fewer than 50 hockey cards, how many cards does he have?

CORRECT RESPONSE: 25

1. Response

Record your judgement on the quality of the solution in the row labelled **Response** for the appropriate problem number on the *Mathematics Student Answer Sheet.* The alternatives are **A** through **G** as specified below:

A. Did not attempt the question.

B. Completes the solution correctly using an appropriate strategy.

C. Gives the correct answer, starts an appropriate strategy, but does not complete it.

D. Gives the correct answer, but does not show reasoning/strategy.

E. Selects an appropriate strategy, but does not get correct answer due to a minor (e.g., computational) error.

F. Selects an appropriate strategy and shows understanding, but does not complete the solution or makes a major error in reasoning.

G. Attempted the question but does not show understanding that would lead to a solution.

Mark only one option for a given problem.

2. Strategy

Please choose the one strategy which most closely matches the students' work and record it in the row labelled **strategy** for the appropriate problem on the *Mathematics Student Answer Sheet.*

A. Did not attempt the question or attempted the question but did not show understanding that would lead to a solution.

B. Answer only, right or wrong, no work shown

C. List that accounts for all possibilities

Piles of 2 with 1 left over

3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, (25), 27, 29, 31, 33,

35, 37, 39, 41, 43, 45, 47, 49

Piles of 3 with 1 left over

4, 7, 10, 13, 16, 19, 22, (25), 28, 31, 34, 37, 40, 43, 46, 49

Piles of 5 with none left over

5, 10, 15, 20, (25), 30, 35, 40, 45

Conclusion: 25 is the only number in all three groups.

D. Systematic elimination of numbers that don't work

1. ~~1, 2, 3, 4, 5~~...~~24~~, (25), 26...48, 49

OR

~~49~~, ~~48~~, ~~47~~...~~26~~, (25), 24...3, 2, 1

2.

Number	Left Over in Piles of 2 or 3	Left Over in Piles of 5
7	1	2
13	1	3
19	1	4
*25	1	0

E. Systematic trial

Number	Left Over In Piles of 5	Left Over In Piles of 3	Left Over in Piles of 2
5	0	2	1
10	0	1	0
15	0	0	1
20	0	2	0
25	0	1	1

S. Other strategy shown

Mental Computation Questions

DIRECTIONS TO TEACHER

Read each of the following questions to the students slowly and distinctly. The numerals only must be written on the chalkboard or overhead transparency. Repeat each question once. Allow students to record only their answers in the squares on the answer sheet provided. For Question 9 read **kilograms** for kg; for Question 11 read **millilitres** for mL; for Question 13 read **millimetres** for mm.

1. **80** + **35** + **40** =_____
2. **560** – **85** =_____
3. **720** + **80** =_____
4. What is the average of **26**, **14**, and **20**?
5. **3.92** × **100** =_____
6. **6** – **0.75** =_____
7. **0.2** × **0.4** =_____
8. **6.5** ÷ **10** =_____
9. How many grams are there in **2.2** kg?
10. $\frac{3}{5}$ of **45** =_____
11. Express **750** mL in litres.
12. How much change will you receive from $**10.00** if you purchase two items which cost $**4.75** and $**3.50** ? Disregard the tax.
13. How many centimetres are there in **65** mm?
14. Mary received **30** marks out of a possible **50**. What is her mark as a percent?
15. Guillaume earned $**15.00** for **2** hours of work. How much would he earn in **3** hours at the same rate of pay?
16. **25%** of **160** =_____
17. What is the sales tax paid on a $**200** purchase if the rate of sales tax is **8%**?
18. Jami spent **20%** of his money. If he had $**50**, how much did he spend?
19. How much interest would you earn on $**1000** in one year if the rate per year is **10%**?
20. The measures of two angles of a triangle are **50°** and **90°**. What is the measure of the third angle?

PROVINCIAL REVIEWS, 1989-90

GRADE 8 MATHEMATICS

SCORING KEY - MENTAL COMPUTATIONAL QUESTIONS

Teacher Directions:

R = Right
W = Wrong
O = Omitted

Align the boxes at the right edge of the Scoring Key with the corresponding boxes on the *Student Answer Sheet*.

Record your mark on the *Student Answer Sheet* by filling in the appropriate bubble. **Use an HB pencil.**

QUESTION	ACCEPTABLE RESPONSE(S)	
1.	155	1
2.	475	2
3.	9	3
4.	20	4
5.	392	5
6.	5.25 / 5,25 / $5\frac{1}{4}$	6
7.	0.08 / 0,08 / .08 / ,08	7
8.	0.65 / 0,65 / .65 / ,65 (NOT $\frac{6.5}{10}$)	8
9.	2 200	9
10.	27 / 27.00 / 27,00	10

(See over for 11 - 20)

PROVINCIAL REVIEWS, 1989-90

GRADE 8 MATHEMATICS

SCORING KEY - MENTAL COMPUTATIONAL QUESTIONS

Teacher Directions:

R = Right
W = Wrong
O = Omitted

Align the boxes at the right edge of the Scoring Key with the corresponding boxes on the *Student Answer Sheet*.

Record your mark on the *Student Answer Sheet* by filling in the appropriate bubble. **Use an HB pencil.**

QUESTION	ACCEPTABLE RESPONSE(S)	
11.	0.75 / 0,75 / .75 / ,75 / $\frac{3}{4}$ / $\frac{75}{100}$ / $\frac{750}{1000}$	11
12.	1.75 / 1,75	12
13.	6.5 / 6,5 / $6\frac{1}{2}$	13
14.	60	14
15.	22.50 / 22,50 / 22.5 / 22,5	15
16.	40	16
17.	16 / 16.00 / 16,00	17
18.	10 / 10.00 / 10,00	18
19.	100 / 100.00 / 100,00	19
20.	40	20

Provincial Reviews
1989 - 1990

OBSERVATION BOOKLET 1

GRADE 8 MATHEMATICS

PROVINCIAL REVIEWS

NAME: _____ BOARD: _____

SCHOOL: _____ TEACHER: _____

MATHEMATICS

PROVINCIAL REVIEW - GRADE 8 MATHEMATICS

OBSERVATION BOOKLET 1

1

For Ministry Use Only

27

CONSTRUCTIONS - PART A

EQUIPMENT

ruler, pencil, compasses, paper, transparent mirror

TEACHER DIRECTIONS

Provide the student with the above materials and say:

"Using any of the equipment on your desk, construct a 45° angle."

PLACE A CHECK IN ONE BOX BELOW TO INDICATE WHAT THE STUDENT DID:

- constructed a 45° angle (*proceed to page 2*) ☐ 1
- did not construct a 45° angle (*proceed to page 4*) ☐ 2

28

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CONSTRUCTIONS - PART A (cont'd)

PLACE A CHECK IN ONE BOX BELOW TO INDICATE WHAT THE STUDENT DID:

- used one of the following methods:
  - paper folding ☐ 1
  - ruler and compasses ☐ 2
  - transparent mirror ☐ 3
- used another strategy (*please describe below*) ☐ 4

29

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CONSTRUCTIONS - PART B

TEACHER DIRECTIONS

The teacher says:

"Please show me a different method from the one you have just used to construct a 45° angle."

PLACE A CHECK IN ONE BOX BELOW TO INDICATE WHAT THE STUDENT DID:

- student unable to complete task ☐ 1
- used one of the following methods:
  - paper folding ☐ 2
  - ruler and compasses ☐ 3
  - transparent mirror ☐ 4
- used another strategy (*please describe below*) ☐ 5

30

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PROVINCIAL REVIEW - GRADE 8 MATHEMATICS

OBSERVATION BOOKLET 1

CONSTRUCTIONS - PART C

EQUIPMENT

paper, pencil, ruler, compasses, tracing paper

TEACHER DIRECTIONS

Provide the student with the above materials and say:

"Using any of the equipment on your desk, construct a triangle with sides of 4 cm, 5 cm and 6 cm."

PLACE A CHECK IN ONE BOX BELOW TO INDICATE WHAT THE STUDENT DID:

- constructed the triangle (*proceed to page 5*) ☐ 1
- did not construct the triangle (*discontinue assessment*) ☐ 2

31

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PROVINCIAL REVIEW - GRADE 8 MATHEMATICS

OBSERVATION BOOKLET 1

CONSTRUCTIONS - PART C (cont'd)

PLACE A CHECK IN ONE BOX BELOW TO INDICATE WHAT THE STUDENT DID:

- used one of the following methods:
  - ruler only ☐ 1
  - ruler and compasses ☐ 2

32

- used another strategy (*please describe below*) ☐ 3

END OF OBSERVATION BOOKLET 1

Provincial Reviews
1989 - 1990

OBSERVATION BOOKLET 2

GRADE 8 MATHEMATICS

PROVINCIAL REVIEWS

NAME: _____ BOARD: _____

SCHOOL: _____ TEACHER: _____

MATHEMATICS

PROVINCIAL REVIEW - GRADE 8 MATHEMATICS

OBSERVATION BOOKLET 2

2

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27

CIRCLE GRAPH

EQUIPMENT

protractor, compasses, ruler, work paper, calculator, pencil, Question Sheet (provided)

TEACHER DIRECTIONS

Provide the student with the above materials. Place the question sheet in front of the student, but do not read it aloud, and say:

"Read and complete the task described using any of the materials on your desk."

DO NOT READ *(FOR TEACHER'S INFORMATION)*

PROBLEM ON QUESTION SHEET:

Every two weeks, Susie receives money for delivering flyers. She spends her money in the following ways:

Clothes	40%
Treats	15%
Entertainment	25%
Savings	20%

Construct a circle graph to represent how Susie spends her money. Label your graph.

PROVINCIAL REVIEW - GRADE 8 MATHEMATICS

OBSERVATION BOOKLET 2

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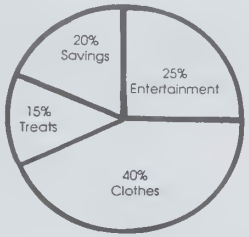
CIRCLE GRAPH (cont'd)

INDICATE, WITH A CHECK, WHETHER THE STUDENT:	(1) YES	(2) NO	
- drew a circle graph using information provided *(if NO, discontinue assessment)*	☐	☐	28
- used appropriate labels for the sectors	☐	☐	29
- titled the graph using an appropriate title eg. "How Susie Spends Her Money"	☐	☐	30
- constructed the sectors accurately	☐	☐	31

EXAMPLE:

How Suzie Spends Her Money



PROVINCIAL REVIEW - GRADE 8 MATHEMATICS

OBSERVATION BOOKLET 2

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CIRCLE GRAPH (cont'd)

INDICATE, WITH A CHECK, WHICH <u>STRATEGY</u> THE STUDENT USED TO DRAW THE GRAPH:

- calculated the number of degrees for each item (144°, 54°, 90°, 72°) and used a protractor to draw the graph	☐ 1	32
- folded paper to determine angles for the graph	☐ 2	
- estimated the size of the sectors	☐ 3	

<u>TEACHERS DIRECTIONS</u>

Attach Question Sheet to Observation Booklet 2.

END OF OBSERVATION BOOKLET 2

CIRCLE GRAPH – QUESTION SHEET

Every two weeks, Susie receives money for delivering flyers. She spends her money in the following ways:

Clothes	40%
Treats	15%
Entertainment	25%
Savings	20%

Construct a circle graph to represent how Susie spends her money. Label your graph.

Provincial Reviews
1989 - 1990

OBSERVATION BOOKLET 3

GRADE 8 MATHEMATICS

PROVINCIAL REVIEWS

NAME: _____ BOARD: _____

SCHOOL: _____ TEACHER: _____

MATHEMATICS

PROVINCIAL REVIEW - GRADE 8 MATHEMATICS
OBSERVATION BOOKLET 3

3

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27

CALCULATOR - PART A

EQUIPMENT

calculator, piece of paper

TEACHER DIRECTIONS

Provide the student with the above materials and say:

"Enter the number 4035 into your calculator."

PLACE A CHECK IN ONE BOX BELOW TO INDICATE WHAT THE STUDENT DID:

- was able to enter the given number (*proceed to page 2*) ☐ 1
- was not able to enter the given number (*discontinue assessment*) ☐ 2

28

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OBSERVATION BOOKLET 3

CALCULATOR - PART B

TEACHER DIRECTIONS

Tell the student:

"I am going to give you a new question. The first number is 1358."

PLACE A CHECK IN ONE BOX BELOW TO INDICATE WHAT THE STUDENT DID:

- cleared the display before entering the first number ☐ 1
- did not clear the display before entering the first number ☐ 2
  Clear the display for the student and have the student enter 1358.

29

Then say:

"Add 973 and subtract 236." *

* After the student enters 236, and before the student "hits" the equal sign, say:

"Sorry the number should be 233. What is the total?"

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OBSERVATION BOOKLET 3

CALCULATOR - PART B (cont'd)

PLACE A CHECK IN ONE BOX BELOW TO INDICATE WHAT THE STUDENT DID:

- cleared only the last entry ☐ 1
- cleared all entries and started over ☐ 2

30

The teacher may repeat the question, if necessary, as follows:

"Enter 1358. Add 973 and subtract 233. What is the total?"

PLACE A CHECK IN ONE BOX BELOW TO INDICATE WHAT THE STUDENT DID:

- calculated the correct answer (2098) ☐ 1
- did not calculate the correct answer ☐ 2

31

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OBSERVATION BOOKLET 3

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CALCULATOR - PART C

TEACHER DIRECTIONS

Say to the student:

"Clear your calculator."

Clear the calculator for the student, if necessary. Then say:

"Multiply 33 and 69. What is your answer?"

Note: If the student did not give the correct answer (2277), clear the calculator and enter the correct answer.

Say to the student:

"To this number add the product of 45 and 38."

PLACE A CHECK IN ONE BOX BELOW TO INDICATE WHAT THE STUDENT DID:

- used the memory keys properly ☐ 1
- did not use the memory keys properly ☐ 2

32

PROVINCIAL REVIEW - GRADE 8 MATHEMATICS

OBSERVATION BOOKLET 3

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CALCULATOR - PART C (cont'd)

PLACE A CHECK IN ONE BOX BELOW TO INDICATE WHAT THE STUDENT DID:

- calculated the correct answer (3987) ☐ 1
- did not calculate the correct answer ☐ 2

33

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PROVINCIAL REVIEW - GRADE 8 MATHEMATICS

OBSERVATION BOOKLET 3

CALCULATOR - PART D

TEACHER DIRECTIONS

Say to the student:

"Clear your calculator."

Clear the calculator for the student, if necessary. Then say:

"Find 15% of 47."

PLACE A CHECK IN ONE BOX BELOW TO INDICATE WHAT THE STUDENT DID:

- calculated the correct answer (7.05) ☐ 1

- did not calculate the correct answer ☐ 2

34

END OF OBSERVATION BOOKLET 3

Provincial Reviews
1989 - 1990

OBSERVATION BOOKLET 4

GRADE 8 MATHEMATICS

PROVINCIAL REVIEWS

NAME: _____ BOARD: _____

SCHOOL: _____ TEACHER: _____

MATHEMATICS

PROVINCIAL REVIEW - GRADE 8 MATHEMATICS

OBSERVATION BOOKLET 4

4

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27

AREA MEASUREMENT - PART A

EQUIPMENT

- ruler marked in centimetres
- acetate sheet of centimetre squared paper (provided)
- rectangle (provided)

TEACHER DIRECTIONS

Place the rectangle and the acetate sheet of squared paper in front of the student. Keep the ruler out of sight, and say to the student:

"Estimate the area of this figure in square centimetres."

Note: If the student just gives a number without the unit, it is correct.

PLACE A CHECK IN ONE BOX BELOW TO INDICATE WHAT THE STUDENT DID:

- estimated the area within the range of 70 cm^2 - 90 cm^2 ☐ 1
- estimated the area within the range of 60 cm^2 - 69 cm^2 **OR** 91 cm^2 - 100 cm^2 ☐ 2
- estimated another area outside the above ranges ☐ 3

28

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OBSERVATION BOOKLET 4

AREA MEASUREMENT - PART B

TEACHER DIRECTIONS

Then say:

"How did you get that area?"

PLACE A CHECK IN ONE BOX BELOW TO INDICATE WHAT THE STUDENT DID:

- used the length of the sides to estimate the area ☐ 1
- guessed the area ☐ 2
- used another strategy (*please describe below*) ☐ 3

29

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OBSERVATION BOOKLET 4

AREA MEASUREMENT - PART C

TEACHER DIRECTIONS

Give the student the acetate sheet of squared paper, the ruler and the rectangle to be measured and say:

"Calculate the area of this rectangle in square centimetres."

PLACE A CHECK IN ONE BOX BELOW TO INDICATE WHAT THE STUDENT DID:

- measured the area of the figure as 80 cm^2 ☐ 1
- did not measure the area of the figure as 80 cm^2 ☐ 2

30

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OBSERVATION BOOKLET 4

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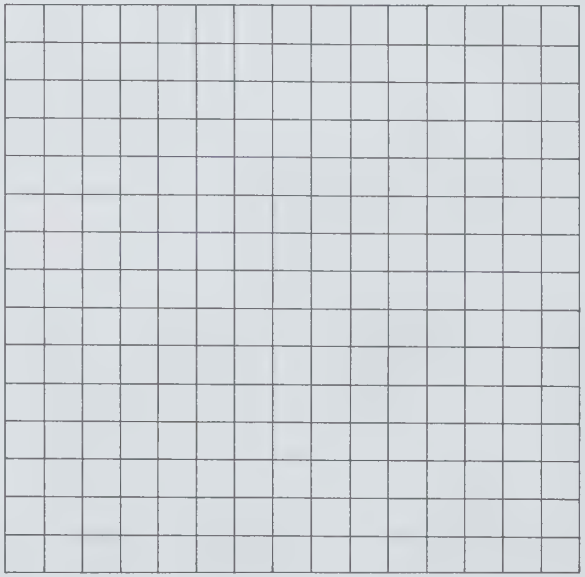
AREA MEASUREMENT - PART C (cont'd)

PLACE A CHECK IN ONE BOX BELOW TO INDICATE WHAT THE STUDENT DID:

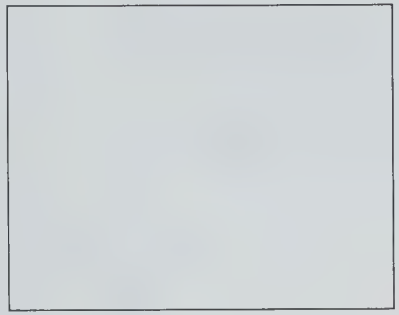
- measured the area of the figure using the ruler and formula ☐ 1
- measured the area of the figure using the squared acetate ☐ 2 31
- measured the area of the figure using another method (*please describe below*) ☐ 3

END OF OBSERVATION BOOKLET 4



OBSERVATION BOOKLET 4

LIVRET D'OBSERVATION 4



Provincial Reviews
1989 - 1990

OBSERVATION BOOKLET 5

GRADE 8 MATHEMATICS

PROVINCIAL REVIEWS

NAME: _____ BOARD: _____

SCHOOL: _____ TEACHER: _____

MATHEMATICS

PROVINCIAL REVIEW - GRADE 8 MATHEMATICS

OBSERVATION BOOKLET 5

5

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27

LENGTH - PART A

EQUIPMENT

- metre stick marked in centimetres
- piece of string 140 cm long (provided)

TEACHER DIRECTIONS

Roll the string into a bundle and place it in front of the student. The metre stick is not to be in sight of the student. Point to the string and say:

"About how many centimetres long is this string?"

Note: If the student uses another unit such as metres or a combination of metres and centimetres, repeat the question:

"About how many centimetres long is this string?"

PLACE A CHECK IN ONE BOX BELOW TO INDICATE WHAT THE STUDENT DID:

- estimated the length in the range of 110 cm - 170 cm ☐ 1
- estimated the length in the range of 80 cm - 109 cm **OR** 171 cm - 200 cm ☐ 2
- estimated the length outside the above ranges ☐ 3

28

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OBSERVATION BOOKLET 5

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LENGTH - PART B

TEACHER DIRECTIONS

Then say:

"How did you get the length?"

PLACE A CHECK IN ONE BOX BELOW TO INDICATE WHAT THE STUDENT DID:

- compared the length with a known object's length (e.g. body parts, table top, etc.) ☐ 1
- guessed the length ("I think it's about ...) ☐ 2
- estimated the length using another strategy *(please describe below)* ☐ 3

29

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OBSERVATION BOOKLET 5

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LENGTH - PART C

TEACHER DIRECTIONS

Give the student the metre stick and say:

"Measure the length of the string in centimetres and tell me the length."

Note: If the student uses another unit such as metres, or a combination of metres and centimetres, repeat the question:

"Measure the length of the string in centimetres."

PLACE A CHECK IN ONE BOX BELOW TO INDICATE WHAT THE STUDENT DID:

- measured the length of the string in the range 135 cm – 145 cm ☐ 1
- measured the length of the string outside the range given above ☐ 2

30

END OF OBSERVATION BOOKLET 5

Provincial Reviews
1989 - 1990

OBSERVATION BOOKLET 6

GRADE 8 MATHEMATICS

PROVINCIAL REVIEWS

NAME: _____ BOARD: _____

SCHOOL: _____ TEACHER: _____

MATHEMATICS

PROVINCIAL REVIEW - GRADE 8 MATHEMATICS

OBSERVATION BOOKLET 6

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ESTIMATION - PART A

EQUIPMENT

- timing device that shows seconds
- sheet of circles (provided)

TEACHER DIRECTIONS

Do not show the page of circles until the student is ready to begin. The page is to be removed from sight at the end of the fifteen second time limit.

Before presenting the page to the student, say:

"Before I start the activity, I will show you how long fifteen seconds lasts."

Start the watch and say:

"Time begins."

At the end of 15 seconds, say:

"That was 15 seconds. I will show you a page of circles for fifteen seconds. At the end of 15 seconds, you are to tell me about how many circles are on the whole page."

Place the sheet in front of the student and start to time 15 seconds. At the end of 15 seconds, move the page out of sight and say:

"Stop! How many circles do you think are on the page?"

Do not accept "I don't know" as a response.

PROVINCIAL REVIEW - GRADE 8 MATHEMATICS

OBSERVATION BOOKLET 6

6

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27

ESTIMATION - PART A (cont'd)

PLACE A CHECK IN ONE BOX BELOW TO INDICATE WHAT THE STUDENT DID:

- estimated the number of circles in the range 70 - 90 ☐ 1
- estimated the number of circles in the range 60 - 69 **OR** 91 - 100 ☐ 2
- estimated the number of circles in the range 50 - 59 **OR** 101 - 110 ☐ 3
- estimated some other number ☐ 4

28

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OBSERVATION BOOKLET 6

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ESTIMATION - PART B

TEACHER DIRECTIONS

Show the student the paper again and say:

"How did you get that number?"

PLACE A CHECK IN ONE BOX BELOW TO INDICATE WHAT THE STUDENT DID:

- counted the number of rows and columns and multiplied ☐ 1
- counted the number of circles in one-half the page and then doubled ☐ 2
- counted the number of circles in one-quarter of the page and then multiplied by 4 ☐ 3
- counted the circles until time was up and then estimated the number of remaining circles to get an estimated total ☐ 4
- guessed the number by inspection ("I just guessed") ☐ 5
- used another method to find the number (*please describe below*) ☐ 6

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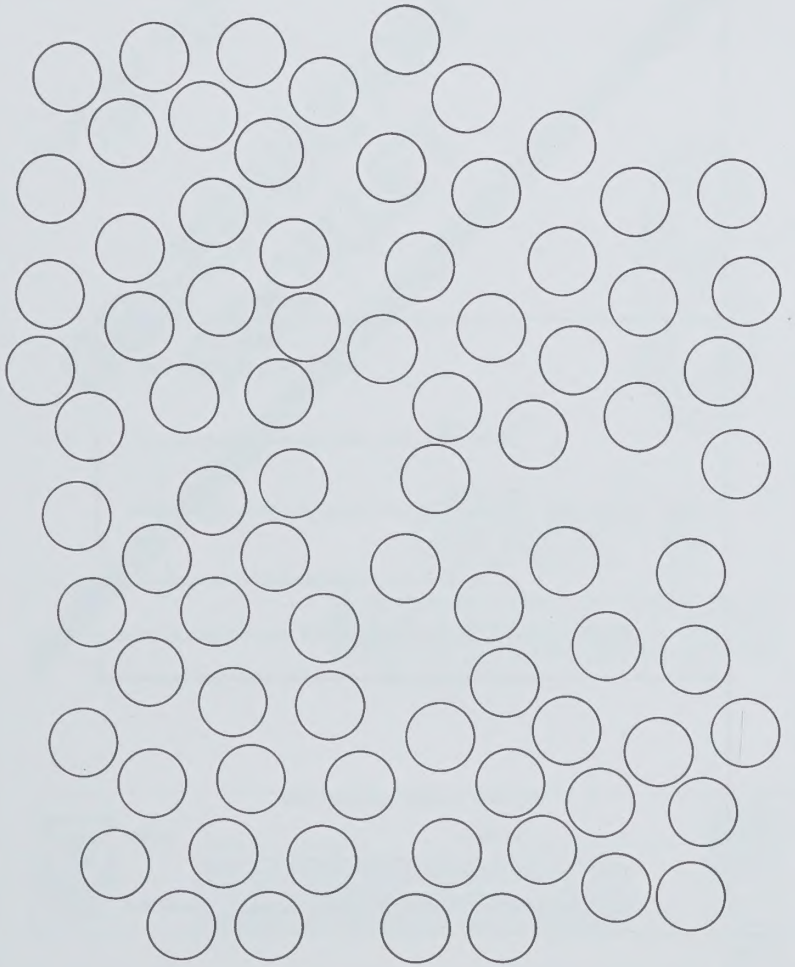
29

END OF OBSERVATION BOOKLET 6

OBSERVATION BOOKLET 6

LIVRET D'OBSERVATION 6



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